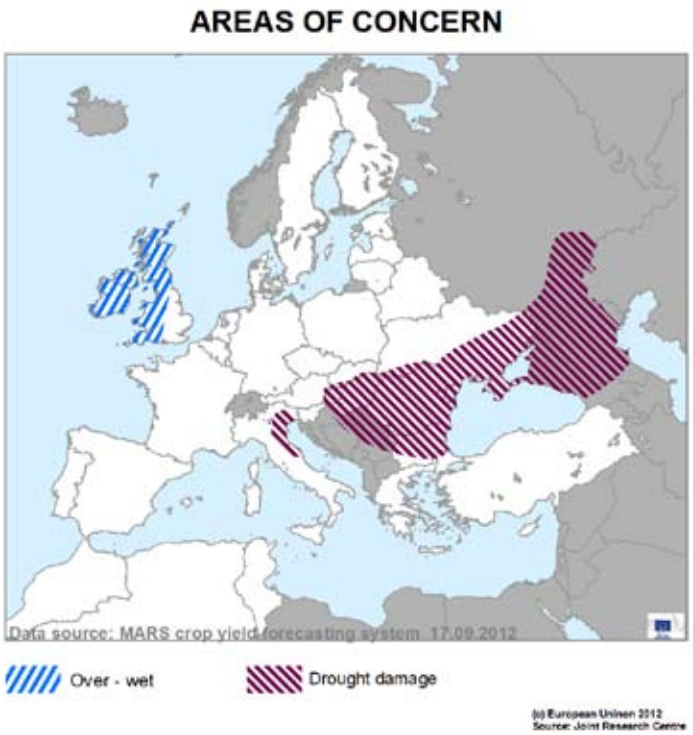
European Commission

Period covered: 21 August - 20 September
Issued: 24 September 2012

Crop Monitoring in Europe

MARS BULLETIN Vol.20 No. 9 (2012)

Further decrease of maize yields in Southern and Eastern Europe



Crop	Yield t/ha				
	2011	MARS 2012 forecasts	Avg 5yrs	%12/11	%12/5yrs
TOTAL CEREALS	5,14	**4,86**	4,99	-5,4	-2,7
Total Wheat	5,35	**5,26**	5,31	-1,8	-0,9
soft wheat	5,59	**5,53**	5,57	-1,1	-0,7
durum wheat	3,20	**3,00**	3,14	-6,3	-4,5
Total Barley	4,31	**4,33**	4,36	+0,4	-0,8
spring barley	3,86	**3,86**	3,83	-0,1	+0,7
winter barley	4,99	**5,17**	5,15	+3,5	+0,4
Grain maize	7,62	**6,05**	6,94	-20,6	-12,8
Rye	3,05	**3,40**	3,18	+11,2	+6,8
Triticale	3,89	**3,89**	3,98	-0,1	-2,2
Other cereals	2,96	**2,84**	3,23	-4,1	-11,9
Rape and turnip rape	2,86	**3,02**	3,00	+5,6	+0,6
Potato	32,48	**30,58**	30,05	-5,8	+1,8
Sugar beet	70,99	**69,25**	67,74	-2,5	+2,2
Sunflower	1,97	**1,64**	1,79	-16,9	-8,6

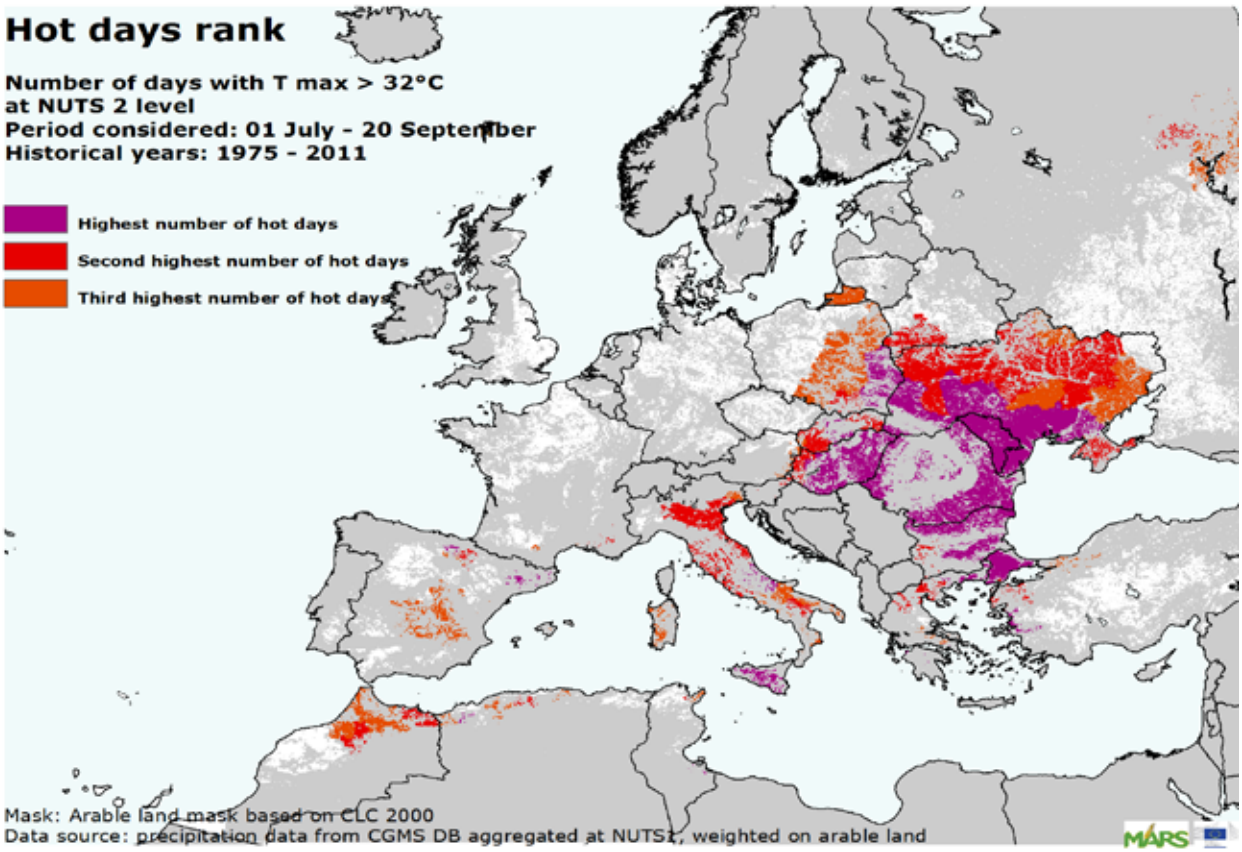
Very high temperatures and scarce rainfall characterised the weather conditions in southern and south-eastern Europe until the end of August before more seasonal temperatures prevailed in September. The hot spell continued to be coupled with scarce rainfall and led again to a decrease in summer crop yields in the countries affected. In general weather conditions were more favourable in central and western Europe, providing average growing conditions for summer crops. In the case of the British Isles, there are still some concerns due to overly wet soils.

Grain maize yield at EU-27 level has been revised downwards since our last Bulletin (-3.7%). In comparison to 2011, grain maize yields are projected to be 20% lower due to sharp yield decreases in Hungary, Bulgaria, Romania and Italy. Potato, sugar beet and sunflower yields at EU-27 level are stable compared to our last Bulletin. Since the harvest of winter cereals throughout Europe is almost finished and apart from the British Isles, no adverse conditions were encountered during the harvesting period, our forecasts from August are confirmed as the crop model simulations are at the end of the growing period.

Joint Research Centre

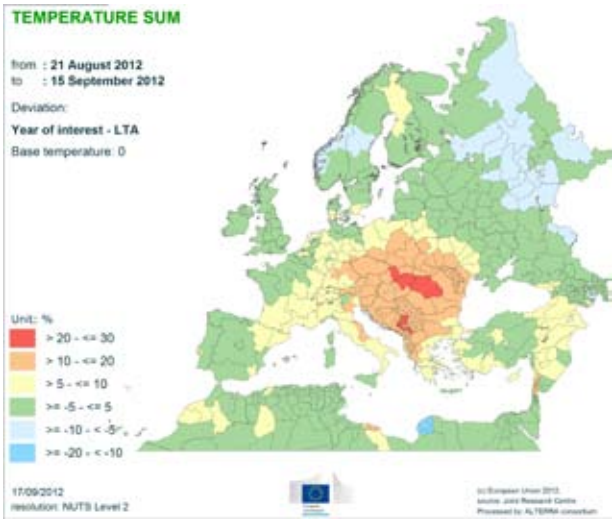
1. AGRO-METEOROLOGICAL OVERVIEW

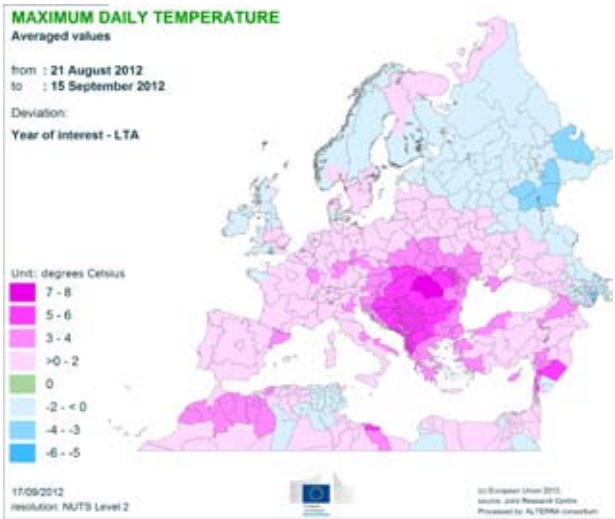
Very high temperatures and scarce rainfall characterised the weather conditions in South and South-East Europe until end of August before more seasonal temperatures prevailed in September. The hot spell continued to be coupled with scarce rainfall. In general weather conditions were more favourable in central and western Europe, providing average growing conditions for summer crops. In the case of the British Isles, there are still some concerns due to overly wet soils.

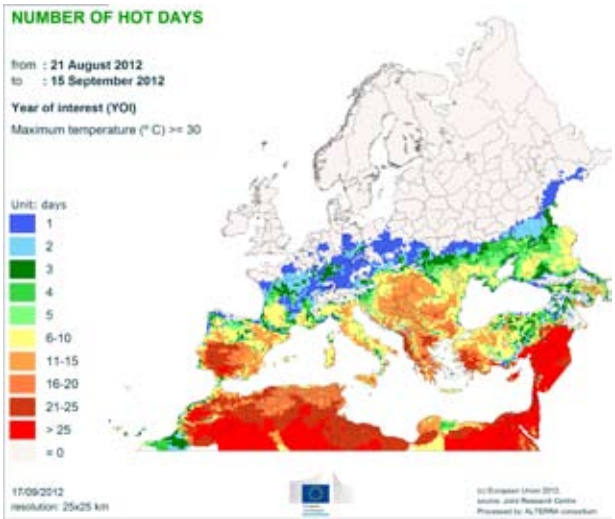


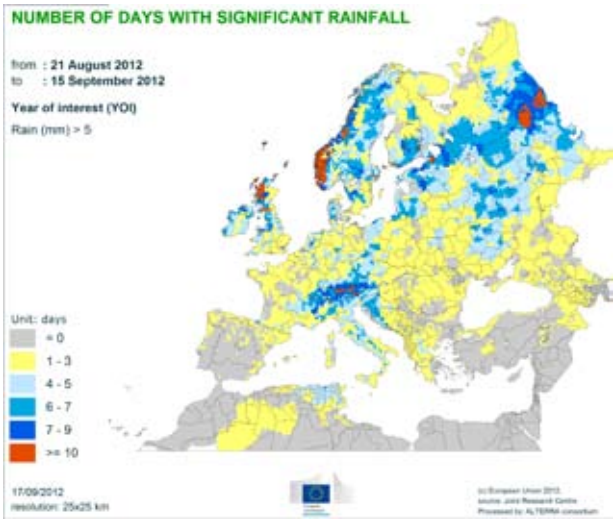
In the last ten days of August, hot weather continued in southern and eastern Europe The mean daily air temperature was +3–4°C higher than the long-term average (LTA) in Italy, Hungary, Romania, Bulgaria, Greece, southern Ukraine, southern Germany, southern Poland, Austria, the Czech Republic and Slovakia. As during most of August, maximum temperatures often exceeded 30°C and even peaked above 40°C in some regions of Bulgaria and Romania. This hot weather further extended the long-lasting heat waves in several regions of Bulgaria, Romania, Greece, Italy and Ukraine to more than three weeks. This exacerbated the negative effects of the heat waves and further decreased the already moderate yield expectations. More seasonal temperatures returned to southern and eastern Europe at the beginning of September. Average air temperatures were slightly above the long-term average. Maximum values still climb above 30°C but extremely hot days (above 35°C) are rare now and within the seasonal norm. Apart from the southern and eastern European countries, southern and central Germany, Austria, the Czech Republic, Slovakia, Poland and most of France also experienced above-average temperatures in the observation period (August 21 to September 15). On the other hand the British Isles, Scandinavia and the Baltic States experienced normal temperatures. In general there were no hot days (above 30°C) in these regions. A few days above 30°C are recorded for France, Germany and Poland. During the entire observation period it did not rain in Spain, some regions of France (e.g. Aquitaine) and in many parts of Hungary, Bulgaria and Romania, further increasing the water deficit. A decisive lack of precipitation since June is recorded for the Iberian Peninsula, Northern Italy, Hungary, Romania and Bulgaria. This goes hand in hand with depleted soil moisture contents under summer crops.

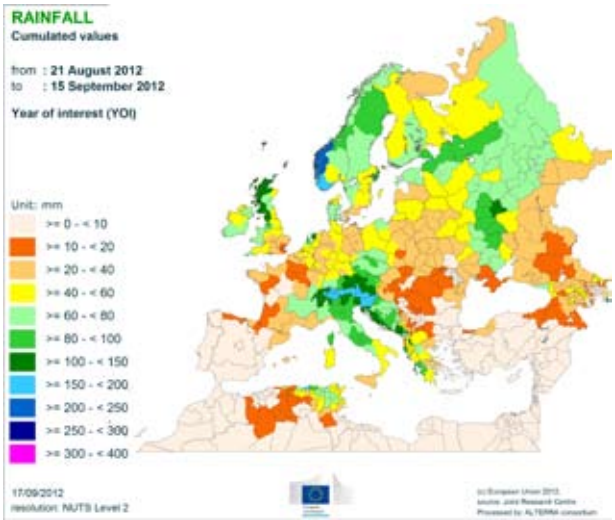
The soil moisture conditions remained favourable for summer crops in most of western and northern Europe, satisfying the water requirements of summer crops. In Ireland, Scotland, southern Scandinavia and the Baltic States, the over-wet soil conditions could even have caused some problems, as August continued to be wet in the British Isles, the Alpine region and Scandinavia. With the exception of central Italy, the Baltic States and Finland, September has so far brought few rainy days across Europe, providing good harvest opportunities in the countries where the harvest was delayed due to an excess of water (the British Isles). So far September has brought moderate amounts of rain that are well below the long-term average for all countries across the European Union with the exception of Italy, Austria, Greece, the Czech Republic and some region of Poland and Finland.

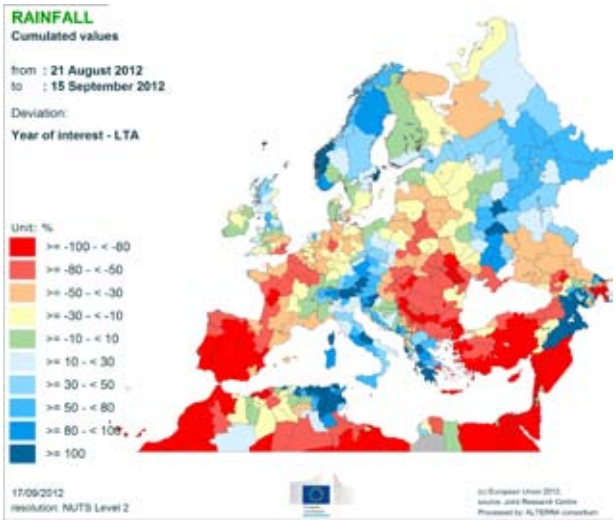

TEMPERATURE SUM
from : 21 August 2012
to : 15 September 2012
Deviation:
Year of interest - LTA
Base temperature: 0
Unit: %
> 20 - <= 30
> 10 - <= 20
> 5 - <= 10
>= -5 - <= 5
>= -10 - < -5
>= -20 - < -10
17/09/2012
resolution: NUTS Level 2


MAXIMUM DAILY TEMPERATURE
Averaged values
from : 21 August 2012
to : 15 September 2012
Deviation:
Year of interest - LTA
Unit: degrees Celsius
7 - 8
5 - 6
3 - 4
>0 - 2
0
-2 - < 0
-4 - -3
-6 - -5
17/09/2012
resolution: NUTS Level 2


NUMBER OF HOT DAYS
from : 21 August 2012
to : 15 September 2012
Year of interest (YOI)
Maximum temperature (° C) >= 30
Unit: days
1
2
3
4
5
6-10
11-15
16-20
21-25
> 25
= 0
17/09/2012
resolution: 25x25 km

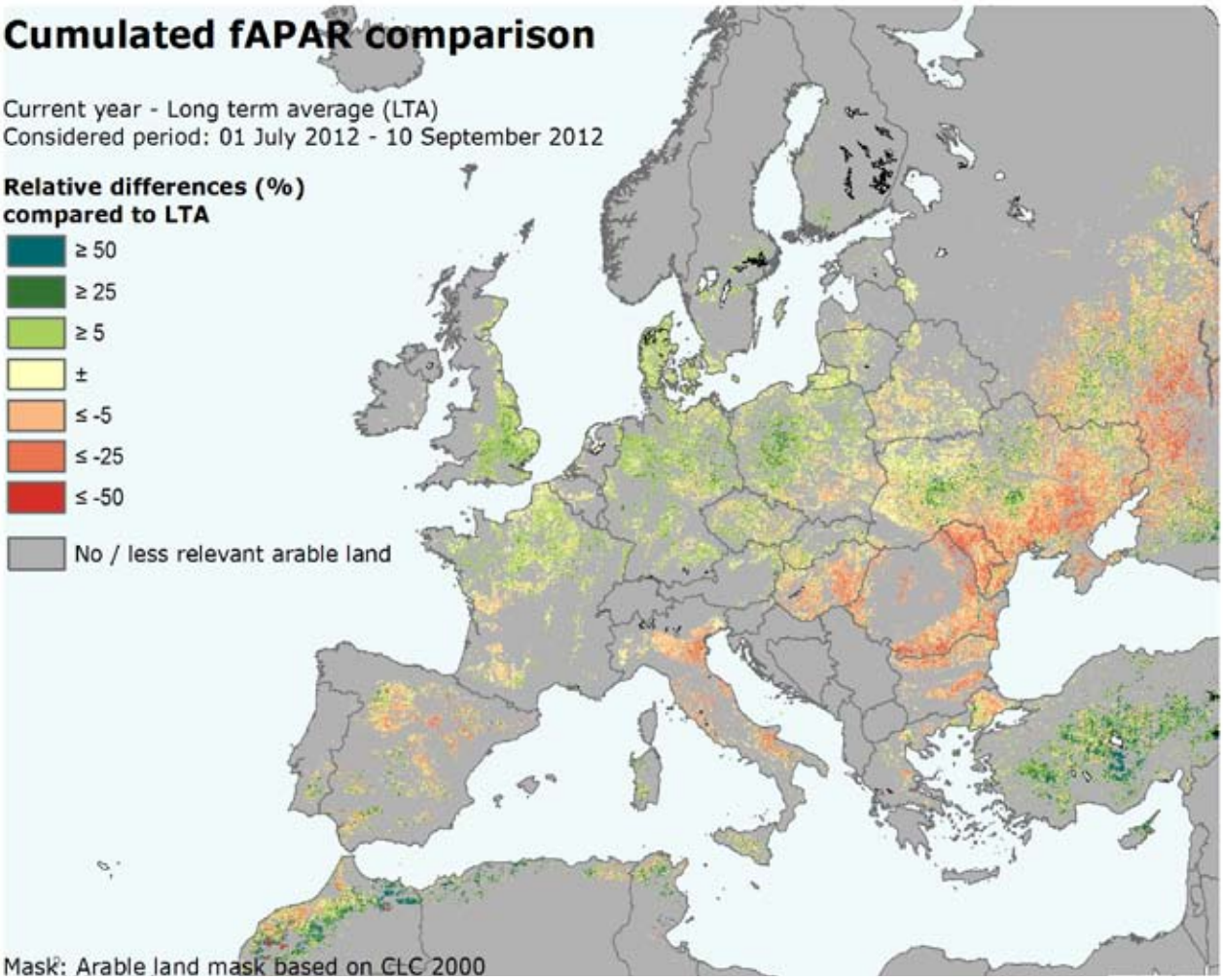

NUMBER OF DAYS WITH SIGNIFICANT RAINFALL
from : 21 August 2012
to : 15 September 2012
Year of interest (YOI)
Rain (mm) > 5
Unit: days
= 0
1 - 3
4 - 5
6 - 7
7 - 9
>= 10
17/09/2012
resolution: 25x25 km


RAINFALL
Cumulated values
from : 21 August 2012
to : 15 September 2012
Year of interest (YOI)
Unit: mm
>= 0 - < 10
>= 10 - < 20
>= 20 - < 40
>= 40 - < 60
>= 60 - < 80
>= 80 - < 100
>= 100 - < 150
>= 150 - < 200
>= 200 - < 250
>= 250 - < 300
>= 300 - < 400
17/09/2012
resolution: NUTS Level 2

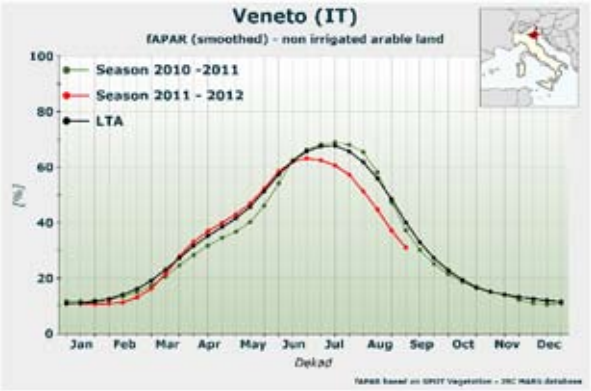

RAINFALL
Cumulated values
from : 21 August 2012
to : 15 September 2012
Deviation:
Year of interest - LTA
Unit: %
>= -100 - < -80
>= -80 - < -50
>= -50 - < -30
>= -30 - < -10
>= -10 - < 10
>= 10 - < 30
>= 30 - < 50
>= 50 - < 80
>= 80 - < 100
>= 100
17/09/2012
resolution: NUTS Level 2

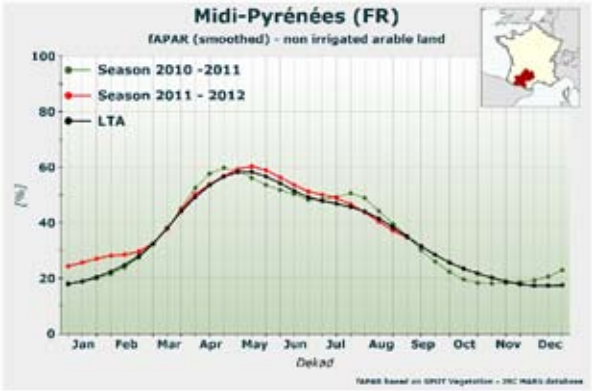
2. REMOTE SENSING – OBSERVED CANOPY CONDITIONS

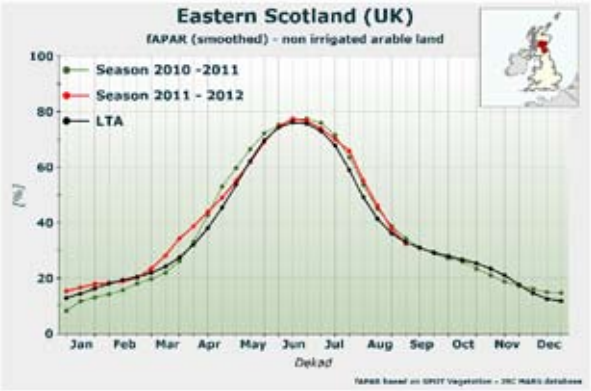
Biomass accumulation in western, central and Baltic countries was better than average during summer. Drought impact on the canopy of summer crops in southern and eastern countries.

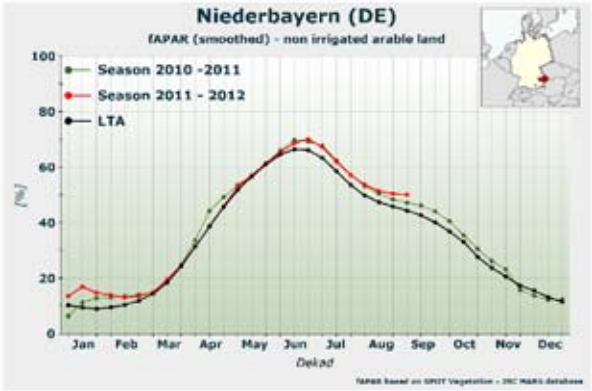


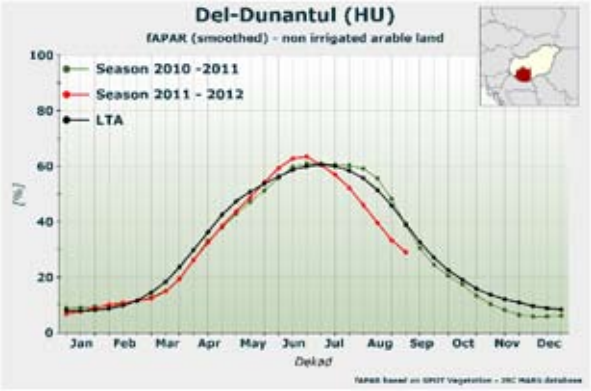
The map above shows the differences between the cumulated fAPAR (fraction of Absorbed Photosynthetically Active Radiation) values from 1 July to 10 September. It also shows the cumulated values in the calculated long-term average year (LTA/1998–2011) for the same period. In **Spain** water reservoirs were sufficient for irrigation in the main summer crops regions. On the contrary, in central and northern **Italy** canopy development of maize and sunflower plants was heavily affected by the high temperatures coupled with very low precipitation. This is shown, for example, in the fAPAR graph for the *Veneto* region, where values for the current year are quite below the average ones. In **France** the weather conditions determined average biomass accumulation during summertime (e.g. the *Midi Pyrenees* graph). In southern agricultural areas the dry conditions brought the end of the summer crops phenological cycle slightly forward. In the **United Kingdom** lack of radiation did not affect canopy density, even when coupled with high rainfall, as shown in the fAPAR graph for eastern Scotland. Weather conditions in **Germany** were quite favourable, resulting in biomass accumulation slightly above the average across the whole country. The fAPAR graph for *Niederbayern* shows a positive summer season with the curve for the current year above the average curve. In **Baltic countries** biomass accumulation still remains at exceptional values while in **central Europe** it ranges around average values. In **Hungary** high temperatures and little precipitation resulted in early senescence for all the summer crops (e.g. the *Del Dunantul* fAPAR profile). There were similar conditions in south-east **Romania** and **Bulgaria**, where the boost to vegetation at the beginning of summer meant that there was a great need for water. However, this need was not met by significant rainfall. Heat stress in August worsened growing conditions and determined a critical level of biomass accumulation for summer crops. In **Ukraine** and **Russia** the impact of the drought in July was partially mitigated by the rainy conditions in August. As shown by the fAPAR graphs for *Dinipropetroska* in Ukraine and *Rostovskaya* in Russia, the curves for the current year return to average values only at the end of the phenological cycle, not allowing any positive expectation for the yield of crops.

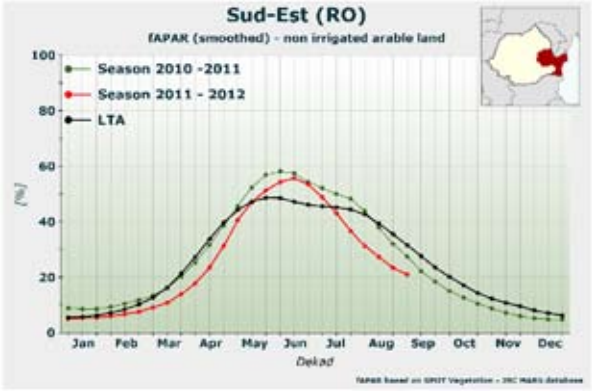

Veneto (IT)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Dekad

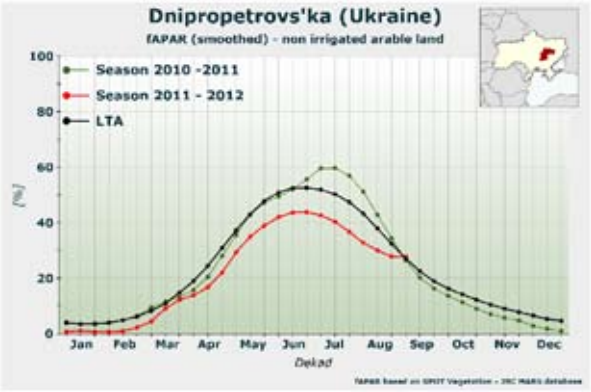

Midi-Pyrénées (FR)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Dekad

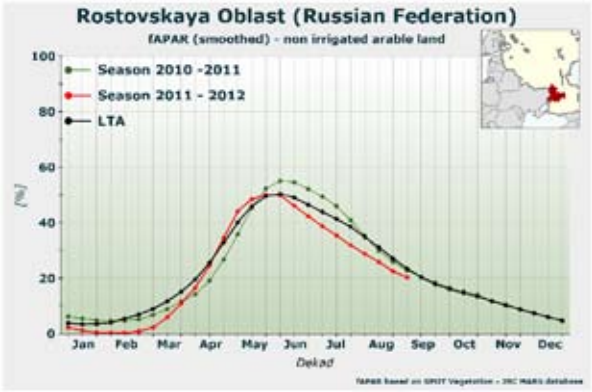

Eastern Scotland (UK)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Dekad


Niederbayern (DE)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Dekad


Del-Dunantul (HU)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Dekad


Sud-Est (RO)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Dekad


Dnipropetrovs'ka (Ukraine)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Dekad


Rostovskaya Oblast (Russian Federation)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Dekad

3. COUNTRY ANALYSIS

EUROPEAN UNION

Grain maize yield projections at EU-27 level has been revised down (-3.7%) since our last Bulletin. In comparison to 2011, grain maize yields are projected to be 20% lower due to sharp yield decreases in Hungary, Bulgaria, Romania and Italy. Potato, sugar beet and sunflower yield projections at EU-27 level are stable compared to our last Bulletin. Since the harvest of winter cereals throughout Europe is almost finished and apart from the British Isles, there were no adverse conditions during the harvesting period, our forecasts from August are confirmed. This is because the crop model simulations relate to the end of the growing period.

France - Summer crops harvest starts in favourable conditions

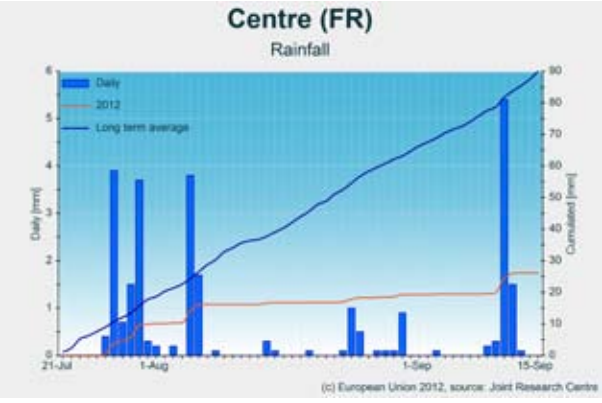
During the last two months, very scarce rainfall was registered in central France and in Atlantic regions. Complementary irrigation was therefore needed to maintain grain maize yield potential. Expectations for summer crop yields are average.

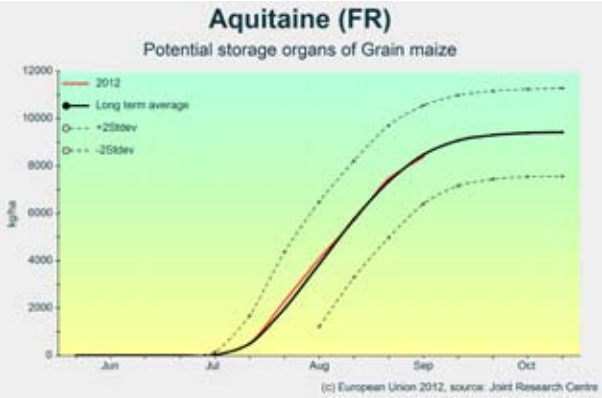
Temperatures registered during the last two months were close to the standard values in almost all regions, with the exception of the south-east, where August was especially warmer than usual. From mid-August onwards, the precipitation registered was very scarce, particularly in the Atlantic basin and central regions. However, overall rainfall during the summer, with abundant precipitation registered in May and June, was sufficient to help maintain the yield potential of summer cereals.

The sunflower is currently reaching maturity in southern regions and harvesting is starting. Expectations are average, thanks to sufficient rainfall during the crop's vegetative development from May to July. The grain maize season is also finishing - the crop has ripened in almost all regions - and favourable weather is expected for the beginning of the harvest period. Scarce rainfall during the last month has made irrigation necessary to avoid major crop water constraints. Average yields are therefore expected to be far from the exceptional yields of last season.

Potato is currently being harvested in the north-east. Expectations fairly close to those of the last five years.

After the humidity of the first half of summer, the dry climatic conditions of the last month have mitigated the long-term effect of diseases. Crop indicators suggest average yields for sugar beets.



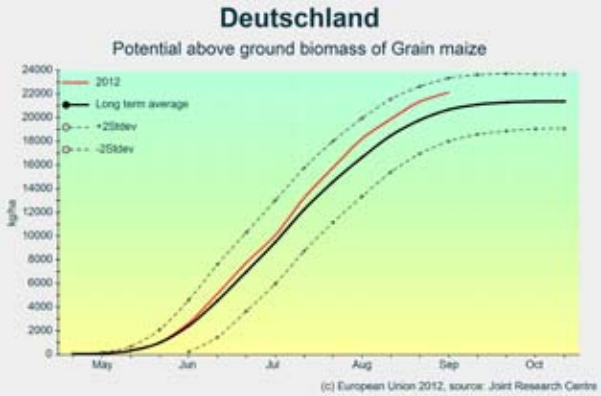


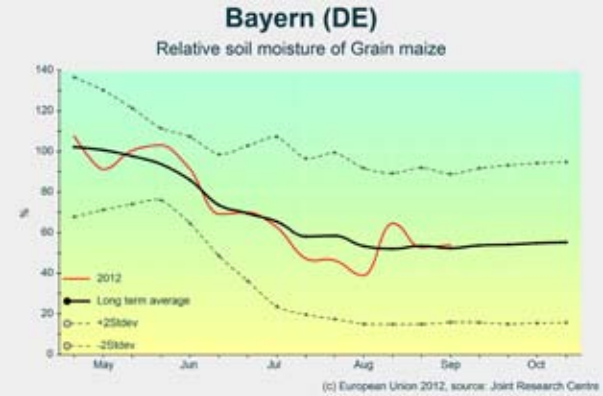
Germany - Summer crops maintain good yield potential

Crop growing conditions were favourable throughout August and September, with a surplus of rain in the south of the country. The harvest was unhampered and winter cereal yields were good. Summer crops benefited from the growing conditions and maintained their good yield potential.

After plentiful rain in June and July, benefiting summer crops and ensuring adequate grain filling for cereals, there were fewer rainy days in August. Most of the country experienced a rainfall deficit, with the exception of the south where a large surplus was recorded. Rainfall also decreased in the south at the beginning of September and rainfall sums for the first half of September are in general well below the long-term average across the country. The relatively stable weather in August and September guaranteed good harvesting conditions. The temperature regime in August was rather seasonal, with a gradient from the north (cooler) to the south (warmer). The same holds for the accumulated temperature with a surplus of 5% to 20% in the south. A couple of hot days above 30°C were recorded but no more than 2-5 consecutive days. There was therefore no negative impact on summer crops. There was a short heat wave around August 20. The highest values were recorded in *Brandenburg* and *Sachsen* (up to 38°C). The beginning of September saw a drop in temperatures but temperatures climbed up again to reach values above 30°C in eastern Germany, *Nordrhein-Westfalen* and *Hessen*.

These weather conditions translated into good growing conditions for summer crops and the harvest of winter crops was not severely hampered. According to our model simulation, grain maize has reached maturity in the south and is at the ripening stage in the rest of the country. The yield forecast is not as high as in 2011 but is clearly above the five-year average, as all our indicators point to a good result. The forecast for potato, sunflower and sugar beet yields is also above the five- year average.

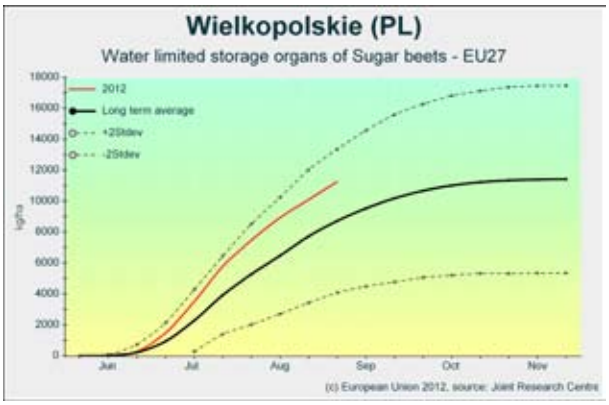




Poland - Mostly favourable weather conditions during the harvest

In most regions rain-free periods allowed cereals to be harvested. Grains were wet however. The development of maize and tubers continued to be average .

According to cumulated temperature values, thermal conditions were similar to the long-term average. However, temperatures varied in time, alternately reaching unusually low and high values. Apart from south-western regions, where cumulated rainfall exceeded average values by 10-15%, rainfall in the rest of Poland was slightly less than average. Relatively dry conditions allowed winter cereals to be harvested. Their yields should be about average. Only triticale is expected to have

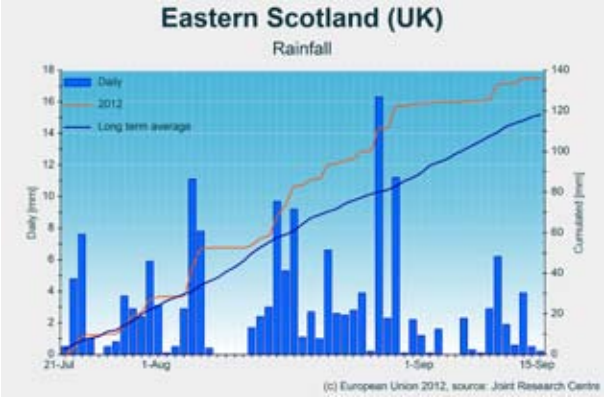


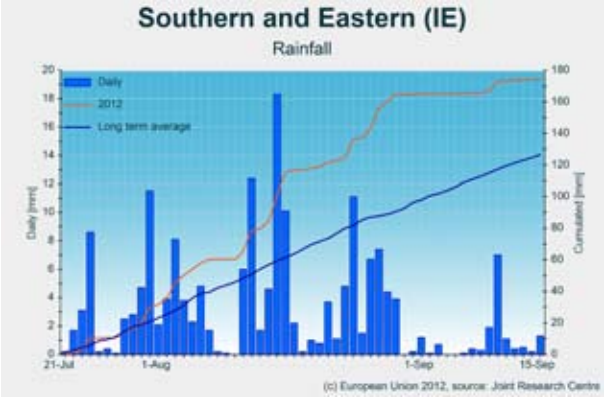
10% lower yield than in the last five years due to intensive frost kill damage. Maize was still at the grain filling stage in the northern regions, while ripening in the rest of the country. Water-limited storage organ values that are close to the average point to a yield that is expected to be slightly above the average. The season is also good for tubers. Based on modelled above-ground biomass and water-limited storage organs, the yield projection was tentatively increased.

United Kingdom and Ireland - Mixed results after harvest delays

Abundant rainfall and delays complicated winter crop harvests. The impact on yields is more variable, with winter wheat well below the average but winter barley and rapeseed slightly above the average for the UK. Mediocre weather in Ireland resulted in yields that were below average for all crops.

Arable land over the eastern part of England was drier than usual from 21 July to 15 September. In Ireland, Scotland and the southwest of England it rained considerably more than usual and rainless days were relatively rare. Ireland further suffered from a sharp decrease in solar radiation. Arable land in the midlands and the east of England, on the other hand, benefited from more sunshine than usual. Overall, average temperatures were slightly warmer than usual. After a difficult season, the rain in many parts has further complicated and delayed the harvest of winter crops. Winter wheat yields in the UK have been significantly revised down in line with reports from several external sources. Winter barley and rapeseed, harvested before wheat, apparently fared better despite the difficult conditions. Yield estimates have accordingly been slightly increased. The yield estimate for spring barley in the UK remains low because the rain greatly delayed the harvest in Scotland. In Ireland, the cereal yield was lower than average as the weather remained mediocre throughout the season. Potatoes are also suffering from excessive humidity and a lack of global radiation in Ireland and Scotland, while the season appears to be average in England. Sugar beet growth simulations for the UK also indicate storage organ accumulation that is close to the average. The yield estimate remains close to the average.



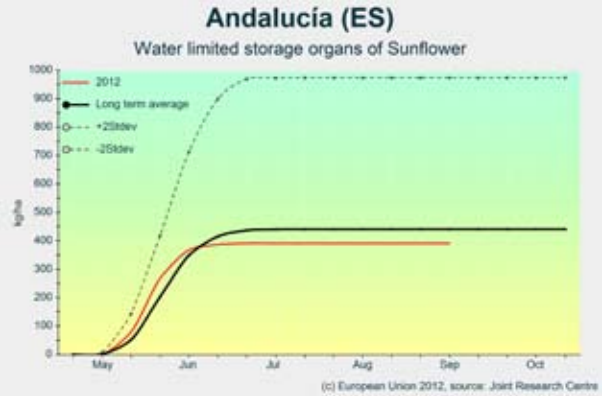


Spain and Portugal - Average outlook for summer crops

Temperatures slightly above the seasonal values during summer benefited the development of summer crops. The harvest is currently taking place in favourable conditions. The irrigation campaign has progressed without major water constraints and yields are therefore expected to be average

Infrequent rainfall and warm temperatures characterised the summer season. In almost all regions, temperatures registered during the last two months were slightly above the seasonal values, with the exception of some areas in Castilla y Leon and the Atlantic basin. The dry conditions prevailed throughout the Iberian Peninsula during the summer, with very scarce rainfall compared to normal values. Significant precipitation was recorded only at specific locations in the Cantabrian Sea regions, *Galicia* and *Cataluña*. The summer crops season is about to finish in the south, where sunflower has already been harvested and grain maize is currently being harvested. Sunflower was adversely affected by the unfavourable weather conditions observed, resulting in expected yields that are significantly below the average of the last few years. In the case of irrigated crops, despite scarce precipitation, the irrigation season seems to have ended without major constraints, especially in the south (*Extremadura* and *Andalucía*), where water stored was sufficient to satisfy crop requirements thanks to a rainy 2011. In some areas of

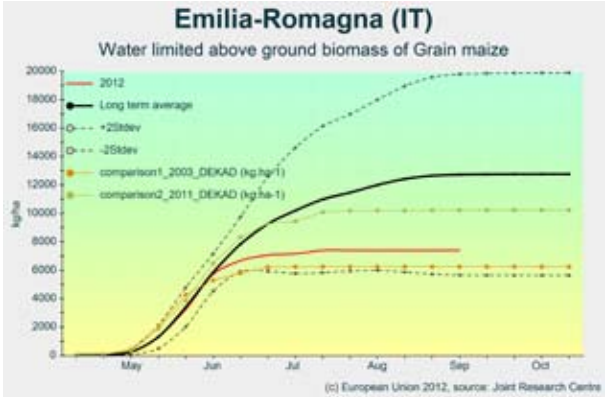
Castilla y Leon, where maize is still at the grain filling stage, irrigation restrictions were moderate. Grain maize yields are therefore expected to remain close to the average, but these results should be confirmed in the next month, when northern regions will begin harvesting. Expectations for sugar beet - already harvested in the south - and potato point towards yields similar to those of the last few years.

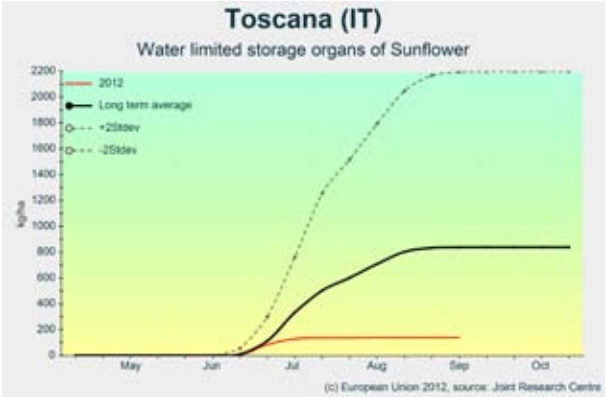


Italy and Slovenia - Expected maize yields revised down again

A dry spell and prolonged heat waves during the summer seriously affected summer crops and expected yields are revised down according to our model simulations.

Very high temperatures and scarce rainfall characterised the summer in Italy and Slovenia. In northeastern and central Italy there was no significant rainfall, prolonging the dry conditions and creating a serious water deficit. In this area, cumulated rainfall from July to August was substantially lower (-100%) than the long-term average Very high temperatures above 35ºC were recorded for several days, pushing cumulated evapotranspiration values above the average. In the northeast of Italy, very high temperatures combined with a dry spell resulted in a significant decline in the photosynthetic activity of summer crops. This is confirmed by remote sensing indicators. In Emilia Romagna and Veneto the very high transpiration demand significantly decreased significantly the biomass accumulation of maize. In many cases, irrigation was insufficient to respond adequately to the increased crop water demand due to less water availability and the very long heat wave. The critical flowering phase for maize took place during a long heat wave.This irreversibly damaged yield potential. In northern and central Italy, sunflower and sugar beet show simulated values of biomass and storage organs that are below the average. Summer crops have already been harvested in many areas. As dry conditions lasted until the harvest, yield estimates were revised downwards again.

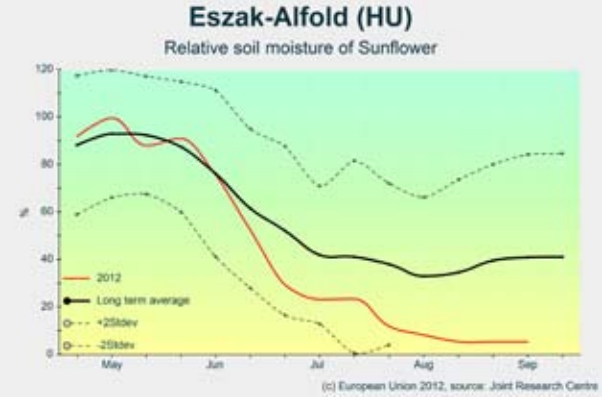


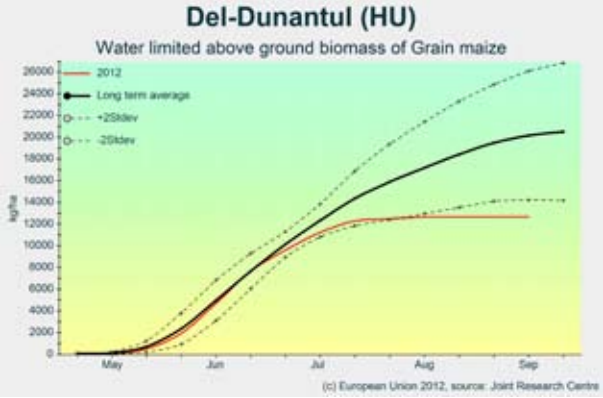


Hungary - Serious drought heavily affecting production

This summer Hungary experienced one of the worst droughts of the last 20 years. Scarce rainfall in August further increased the water deficiency of soils and hindered the grain filling of maize and the growth of all crops. Yield expectations are very low for all crops. While the situation is very unsatisfactory in the southern and eastern regions, it is slightly better in *Nyugat-Dunantul* and *Eszak-Magyarorszag*.

During August and the first ten days of September, hardly any precipitation was recorded in the wide central territories of Hungary, aggravating the serious drought situation. Cumulated rainfall remained below 10 mm for most of the country and reached only 10-20 mm in some areas along the western and eastern border. Thermal conditions were also very bad. Most of the time, the temperature exceeded the average. The only exception were the second ten days of August and mid-September. In western and northern regions, there were 15-20 hot days (maximum temperature over 30°C) during the observation period. In the central and southern regions, 20-32 hot days were observed. The high number of hot days is more than double (120-150%) what is climatologically expected. From September 12 significant precipitation reached the western half of Hungary and the temperatures dropped suddenly, but the warm, dry weather continued in eastern Hungary. The long-lasting drought had very negative effects on the grain filling of maize and lowered yield expectations to the minimum. Nevertheless there are big spatial differences. The worst fields are being harvested or have been harvested as green maize for silage. This could lead to a significant decrease in grain maize acreage. All summer crops will probably be harvested early, especially maize. This is due to accelerated crop development because of the recurring heat waves and dryness. Sunflower, which withstands drought better, also suffered from a lack of water, but yield losses are lower compared to other summer crops. Potato and sugar beet yield forecasts were lowered significantly. It could also require extra energy to dig out these crops because the soil is so dry.

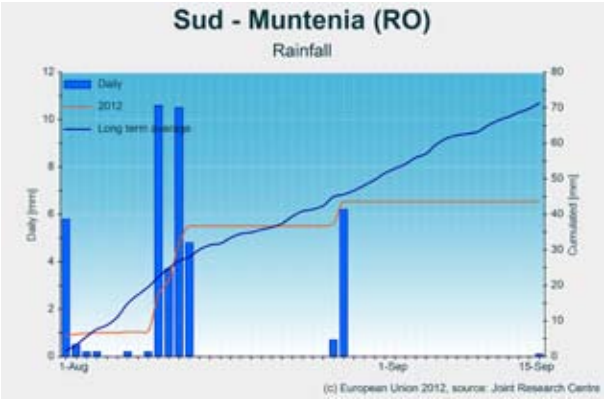


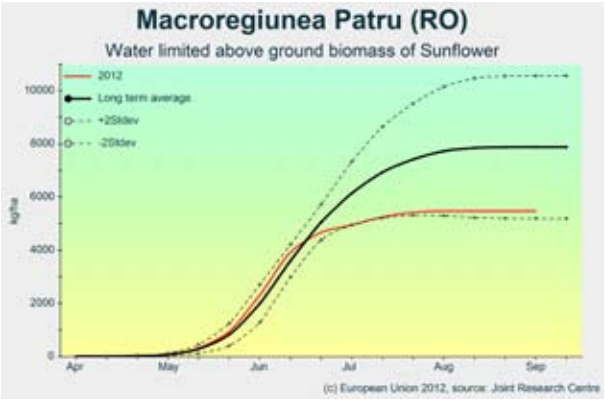


Romania - Drought reduced maize and sunflower yields

The average temperature during the period observed was 2-3°C higher than usual in Romania. The cumulated rainfall of August remained 25-65% below the average and only some areas in the south-east experienced plentiful precipitation. The heat waves and water shortages of this summer coincided with the flowering and grain filling of maize and sunflower. The result was a clear deterioration of biomass formation and a very negative impact on final yields. Crop model simulations show low sugar beet yields too.

The first and last ten days of August were very hot. Maximum values exceeded +35°C for several days. In September thermal conditions became slightly moderate, but remained warmer than usual. Rainfall in August improved the soil water balance but it did not reach normal levels. September was dry until the middle of the month. The climatic water balance shows a deficit of >150 mm all over the country and of over 200 mm in central and north-eastern regions for 1 June -15 September. This proves that there is serious drought. The temperatures that were above the average unfavourably shortened the crop cycle of maize and sunflower. These crops reached maturity early at the end of August or the beginning of September. A decrease in maize acreage is probable, due to the premature harvest of damaged fields as green maize. Potato also completed its cycle earlier and the long-lasting hot and dry spell could have significantly decreased the yield, in the Centru region for example. Sugar beet is still in yield formation. Although it is probably being significantly compromised, it could still benefit from the autumn rains (if any) in the final stages of its development.

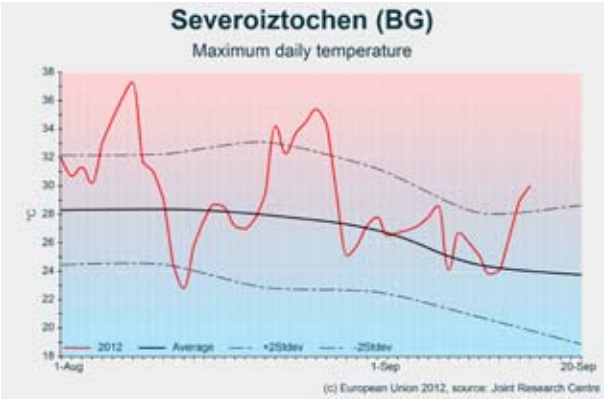


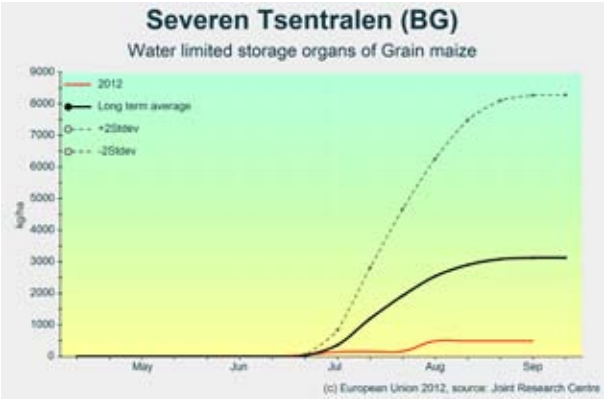


Bulgaria – Unfavourable hot and dry weather persisted

The drought continued in Bulgaria, as unusually high temperatures and low rainfall were recorded in August and September. The heat waves accelerated crop development and induced early senescence. The low soil moisture content was inadequate to support the grain filling of maize and sunflower. The simulated yield for the other summer crops is also very low.

The hot and dry weather continued throughout August in Bulgaria. The first ten days of the month were characterised by a hot spell. Daily maximum temperatures exceeded 30°C. Around 7 August they reached high peaks of more than 40°C in the north of the country. Temperatures dropped in the middle of August, but there was a recurring heat wave during the last ten days of August. Maximum temperatures again exceeded 40°C in several places around 25 August. Thermal conditions were above the average until the middle of September month. Some scarce, local precipitation at the beginning of August had no significant effect on crops. The dry spell was interrupted partially around 10 August with some significant rainfall in the northern and western regions. From mid-August the weather turned dry again and cumulated precipitation remained below 10 mm for the cultivated areas. The phenological development of all crops is advanced or very advanced. An early harvest is therefore likely. The early senescence of leaves and the premature decrease in leaf area is typical due to the unfavourably high temperatures and water shortage for all non-irrigated crops. Water scarcity in combination with the heat waves badly affected the maize crop during grain filling. The rain of mid-August was not sufficient to replenish the soil moisture and was only able to ease plant stresses temporarily. Simulated maize and sunflower biomass and our yield forecasts are well below the long-term average.

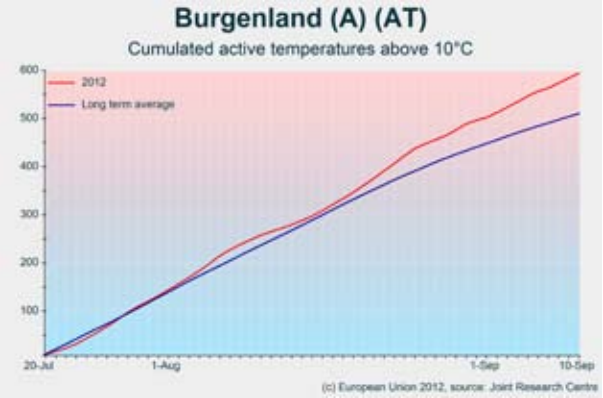




Austria, Czech Republic and Slovakia - Grain quality reduced by very high temperatures during maturation

High temperatures continued through August with two peaks during the first and the last ten days of the month. These conditions may have affected yields and grain quality, especially in eastern Austria and western Slovakia. As a consequence, the expected grain maize yield was revised down. The sunflower, sugar beet, potato and winter crops forecasts are unchanged.

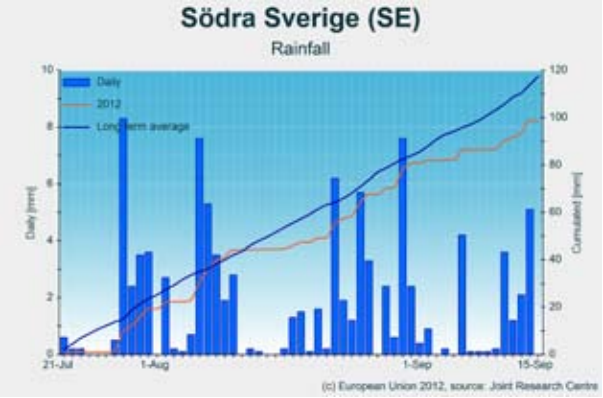
The warm conditions in July continued through August. Two temperature peaks were registered during the first and third ten days of the month, when maximum temperatures reached 35°-36°C, well above the threshold of twice the standard deviation. As a consequence the cumulated active temperature was above the long-term average in the three countries. In general rainfall was around the long-term average in the three countries, with the exception of the *Zapadne Slovensko* region in western Slovakia. In this region, the same dry, warm conditions registered in July persisted throughout August, resulting in an evaporation rate above the long-term average and a consequent negative climatic water balance. These conditions may have affected yields and the quality of grain maize during ripening and maturation in the three countries, especially in Slovakia. As a consequence, the expected grain maize yield was revised down. The sunflower, sugar beet, potato and winter crops forecasts are unchanged.

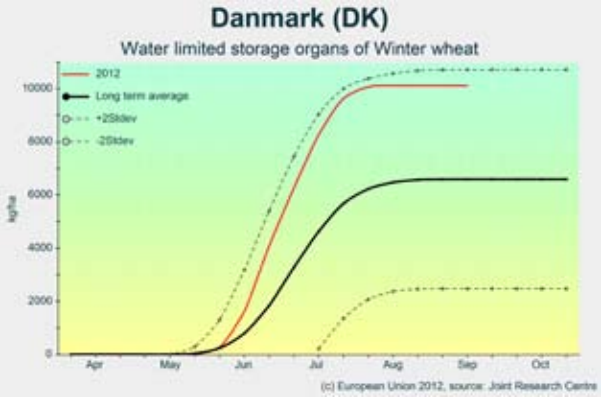


Denmark and Sweden – Positive conditions for crops overall

Dry weather provided favourable harvest conditions for winter crops and the positive forecast for winter and spring crops has been confirmed.

During the observation period, from 21 July until 15 September, temperatures around the long-term average were recorded while global solar radiation was above the LTA, mainly in Denmark. In this period, rainfall was about 10 - 30% below the average in Denmark and in southern Sweden. In northern Sweden the rainfall recorded was more than 30% above the average. In Denmark and southern Sweden, dry weather during the second ten days of August provided favourable harvest conditions for winter crops. By contrast wet conditions in northern Sweden hampered the harvest. According to our models, the satisfactory yield expectation for winter crops has been confirmed, thanks to good weather conditions during the





ripening stage. The harvest of spring barley just ended and the yield is forecast to be above the five-year average. The season is also good for root crops and according to the simulated values of biomass and storage organs, the yield forecast was revised up. Potato shows good prospects for the coming harvest but could suffer from excessive humidity in the next week.

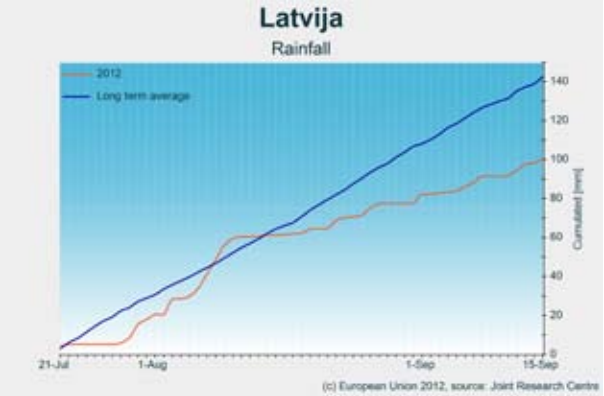
Finland and Baltic states – Good season for winter wheat

Average temperatures and average global radiation accumulation during the season, together with good weather during the harvest, led to good yields, especially for winter wheat.

Thermal conditions during the observation period (July 21 to September 15) were conducive to crop growth and development. Temperature accumulation was very close to average values, as was accumulated global radiation. Due to this most of the crops reached maturity on time. Precipitation is a very important factor during the ripening and harvesting stage, especially in Nordic agriculture, as too much rain decreases the yield and the quality of the crops, especially cereals. During the observation period there was less rain than usual in Latvia (-30%) and Lithuania (-14%). It rained slightly more than usual in Estonia (+3%) and Finland (+11%). The harvest in Latvia and Lithuania took place in more favourable conditions than usual. The rainfall distribution was unfavourable in Finland during the first week of August. The excess of rainfall created problems for the harvest, but fortunately it did not last long enough to have adverse effects on crop quality. Later rainfall decreased and came close to the average.

There are still several crops in the fields that will be harvested soon.

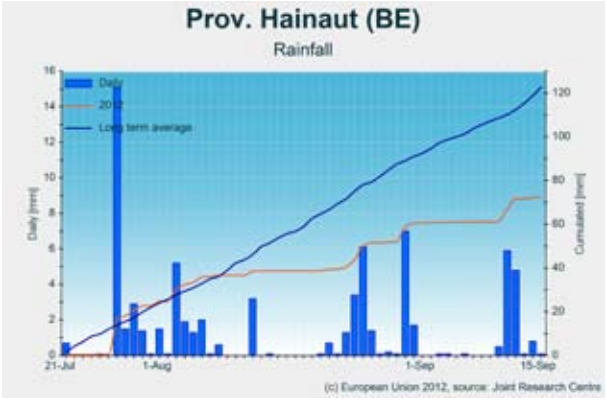
Conditions for cultivating the soil and planting winter crops are average and winter crops are expected to be planted on time. Our yield forecasts for most crops are close to the five-year average. The biggest yield increase is forecast for soft wheat and triticale in Latvia and Lithuania, where harvest seems to be very good. The forecast yield is 7-8% higher than the five-year average and about 20% higher than last year.

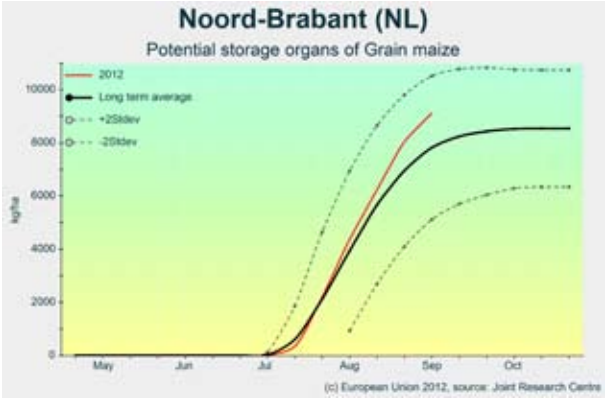


Belgium, The Netherlands and Luxembourg – Dry end of summer provides positive outlook

Decent conditions for harvest during late summer should result in slightly above average cereal yields. Favourable global radiation, temperature and precipitation regimes should boost summer crops in Belgium, where these crops had started with difficulty and in the Netherlands, where the season appears overall quite positive.

Summer was considerably drier than usual in Luxembourg, Belgium and the southern Netherlands, resulting in cumulated precipitation well below the average, while several parts of the northern Netherlands had considerably more rain than usual. However, throughout the whole Benelux region, rainy periods were separated by relatively long stretches of dry days, providing decent harvesting conditions for winter crops. Yield estimations remain unchanged: those for cereal yields generally stand around or above the average, for rapeseed slightly below it. Both temperature and global radiation were slightly above the long-term average, resulting in favourable conditions for growth and the development of summer crops. These are welcome, particularly in Belgium where potatoes and sugar beet started badly due to delayed sowing and excessive rain. Despite the improvement in meteorological conditions, yield forecasts were maintained below average for all summer crops in Belgium due to uncertain repercussions at the beginning of the season. In the Netherlands the conditions appear generally more favourable for the proper development of these crops. Model simulations indicate higher potential biomass of storage organs than the average and yield forecasts are, accordingly, above the average.

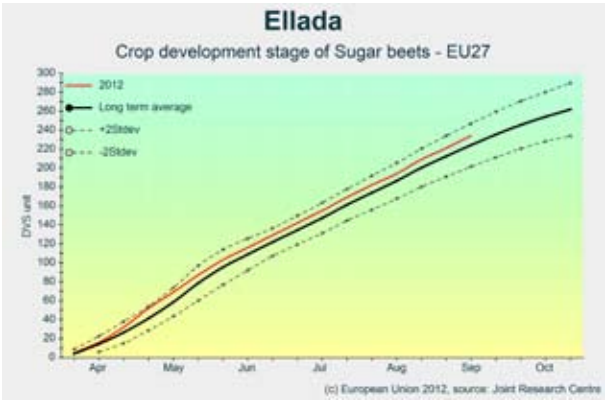


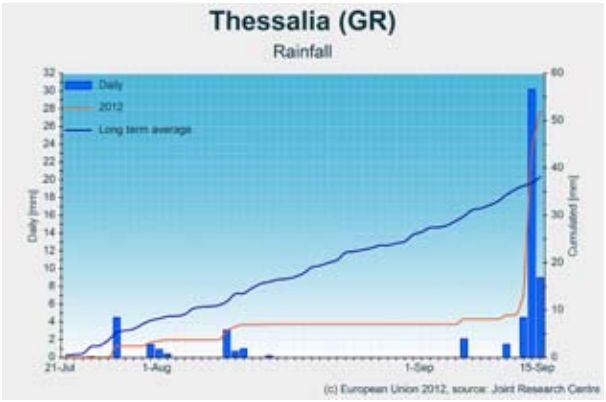


Greece and Cyprus – Average yield scenario for summer crops

A favourable temperature regime and other weather parameters seem to be acting as a pivot for the development of summer crops. Average crop performance is therefore expected.

The observation period, which lasted until 15p September, showed a mixed picture of weather indicators in the last two months. They were characterised by favourable temperature development and solar radiation but with erratic, scarce rainfall which affected the soil water balance. However, crop production may not be hampered because water is available for irrigation. The yield forecast for grain maize has been revised down. For the rest of the crops a normal yield is forecast..The barley yield forecast for Cyprus is again close to the five-year average due to favourable growth conditions.





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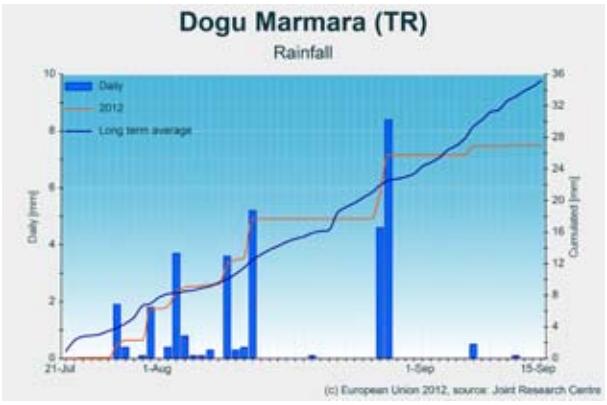
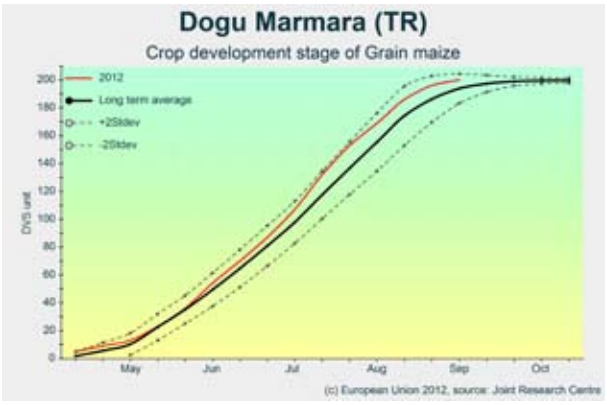
Turkey – Average crop yield

Crop yield benefitted from the prevailing favourable weather conditions characterised by ample rainfall and a positive temperature regime. Yield values close to the five-year average are forecast for grain maize.

Meteorological conditions in the observation period (July 21 to September 20) were conducive to crop development. This is reflected by temperature development and continuous rainfall, mainly in the maize-producing areas, that more or less ensures good yield expectations. The grain maize yield forecast is therefore forecast close to the average values of the last five years. The growing season for wheat and barley is already over. Due to a conducive environment, their production is also expected to be unaffected and remains at the average.

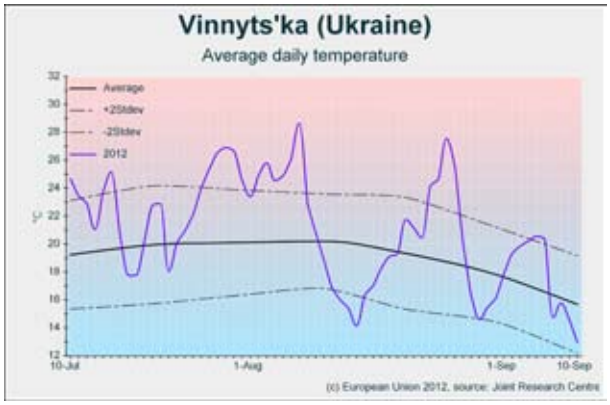




Ukraine – Average yields despite a difficult maize season in the north-east

Harvesting activities in the eastern regions were slightly hampered by rain. Maize development varies significantly among regions, but overall points to an average yield.

Meteorological conditions in the observation period (July 21 to September 15) varied notably in time and space. The average temperature was 2-3°C higher than the long-term average in the central and southern regions (temperature sums: +10%). The period observed was characterised by large changes in temperature. Exceptionally high values occurred in the third ten days of July, on 1 and 3 August and 2 September. The middle and the third ten days of August and the first ten days of September brought significant drops in temperature. Abundant rainfall in the eastern regions (e.g. +60% in *Dnipropetrovska*, *Zaporizka* and +45% in *Kharkivska*) hindered harvesting activities, but significant losses are not expected. Concurrently southern regions received less rain than the long-term average (e.g. *Vinnytska* -30%, *Mykolayivska* -40%, and *Odeska* and *Krym* -60%). The harvest of cereals was completed and previously forecast yields confirmed. Maturing maize maturing continued to have a difficult season in most regions. In the western regions it developed on average, whereas in the north-eastern regions with the highest production, storage organs are modelled at less than 50% of average values. This points to yields slightly lower than our previous forecast.



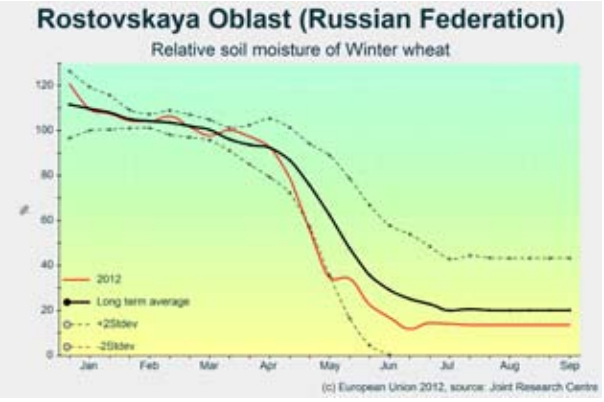
EUROPEAN RUSSIA AND BELARUS

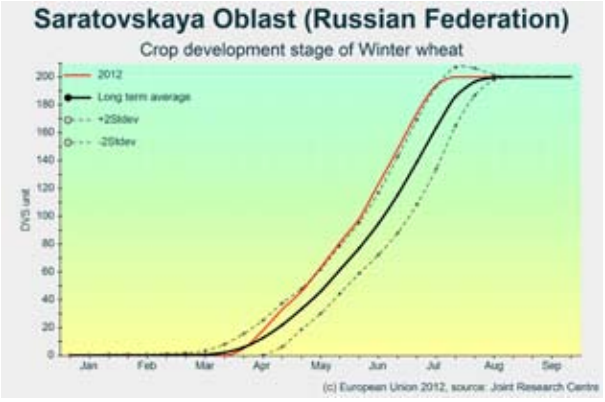
European Russia - Serious drought decreased cereal yields

Dry, warm summer weather continued until mid-August. The persistent drought decreased the yield expectations of both winter and spring cereals in the main producing southern regions. The high temperatures shortened the grain filling and ripening stage, leading to an early harvest. The soil dried out towards the end of the crop cycle, but from the second ten days of August the weather turned rainy. This increased the soil moisture content.

During the first half of August most of European Russia experienced warm weather. The temperature exceeded the average by 4-6°C in a wide belt between the Ukrainian border and South Ural Mountains. It was also higher than normal by 2-4°C in the wide central regions and north of the Caucasus Mountains. From mid-August temperatures decreased to normal level or below normal level and thermal conditions became more changeable. After a dry first ten days of August plentiful rain arrived and rainy days continued until mid-September. Precipitation sums are in the range of 80 – 100 mm for the Central and Volga Okrugs. This is 30-100% more than the climatologically expected value for this period. The frequent and heavy rain could have hampered the harvest of spring cereals that ripen later. By replenishing the soil moisture however, it is conducive to the sowing of winter cereals. Precipitation in the region between the Black Sea and the Caspian Sea was also above the average.

Winter wheat reached maturity in mid-August in the northernmost cultivated areas and spring barley had finished its cycle by the end of August in the whole country. These crops developed very much in advance, primarily in southern Russia. This led to a significant shortening of the grain filling period. This has worsened the already lowered yield expectation due to a long-lasting severe water shortage in the South, Volga and Central Okrugs. The damage and loss caused by the drought of this year are irreversible and are leading to a significant reduction in yields.

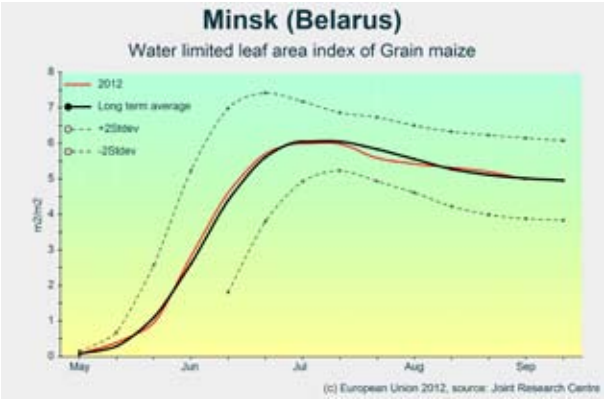


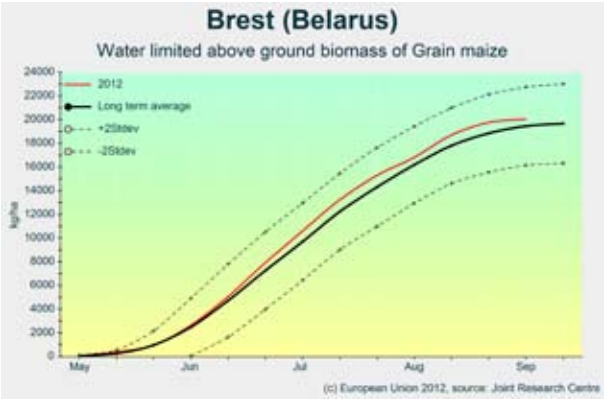


Belarus – Seasonal weather conditions and good maize prospects

The rainy August could have temporarily hampered the cereals harvest, but it also supplied summer crops with water. Simulated maize development shows considerable precocity and an average leaf area index. Water-limited biomass indicates a moderate surplus. Consequently our maize yield forecast is slightly optimistic.

The temperature fluctuated significantly in August and September. Hot and cold periods varied, finally resulting in seasonal mean temperatures for the observation period. The first and last ten days of August and some days around 10 September were unusually warm. The daily mean temperatures continuously exceeded the average. On some days they even approached historical record values or set new ones. In the first ten days of August the highest daily temperature maxima generally exceeded 30°C and in some spots in the Gomel region reached over 36°C. In the second ten days of August cold thermal conditions prevailed in Belarus and below average temperatures below the average were recorded. Country-wide precipitation was normal or above normal in August . Cumulated rainfall was plentiful in the southern regions and the number of days with significant rainfall (>5 mm) was two to four days more than usual in *Brest*, *Mogilev* and *Vitebsk*. The frequent and locally abundant rain could have delayed the harvest of wheat and barley. The first half of September was notably dry, with 30-90% less precipitation than the climatological sum, providing good conditions to finish the harvest. Soil moisture under maize and other summer crops remained sufficient for adequate crop growth. The phenological stage of maize shows an advance of one to three weeks advance. Canopy development follows the normal course everywhere. Biomass accumulation and the forecast yield is slightly above the average.





4. CROP YIELD FORECASTS

EU-27 and neighbouring countries

Country	TOTAL WHEAT (t/ha)					SOFT WHEAT (t/ha)					DURUM WHEAT (t/ha)				
	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs
EU27	5,35	**5,26**	5,31	-1,8	-0,9	5,59	**5,53**	5,57	-1,1	-0,7	3,20	**3,00**	3,14	-6,3	-4,5
AT	5,85	**5,09**	5,25	-13,1	-3,1	5,90	**5,13**	5,30	-13,0	-3,3	5,09	**4,33**	4,42	-14,9	-2,0
BE	8,14	**8,83**	8,60	+8,4	+2,6	8,14	**8,83**	8,60	+8,4	+2,6	-	**-**	-	-	-
BG	3,92	**3,63**	3,39	-7,5	+7,0	3,91	**3,62**	3,38	-7,3	+7,1	4,30	**3,81**	3,81	-11,3	+0,2
CY	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
CZ	5,69	**5,25**	5,33	-7,7	-1,4	5,69	**5,25**	5,33	-7,7	-1,4	-	**-**	-	-	-
DE	7,01	**7,59**	7,42	+8,2	+2,3	7,02	**7,60**	7,43	+8,2	+2,3	4,74	**5,38**	5,37	+13,3	+0,1
DK	6,77	**7,39**	7,17	+9,1	+3,0	6,77	**7,39**	7,17	+9,1	+3,0	-	**-**	-	-	-
EE	2,65	**3,01**	3,01	+13,6	+0,2	2,65	**3,01**	3,01	+13,6	+0,2	-	**-**	-	-	-
ES	3,46	**2,46**	3,20	-29,0	-23,3	3,70	**2,76**	3,46	-25,2	-20,0	2,48	**1,20**	2,43	-51,7	-50,8
FI	3,85	**3,78**	3,77	-1,8	+0,4	3,85	**3,78**	3,77	-1,8	+0,4	-	**-**	-	-	-
FR	6,66	**7,14**	6,87	+7,2	+4,0	6,81	**7,35**	7,05	+7,9	+4,3	4,84	**4,84**	4,85	-0,1	-0,2
GR	2,26	**2,42**	2,53	+7,2	-4,3	2,66	**2,83**	2,80	+6,4	+1,1	2,12	**2,31**	2,43	+8,9	-5,1
HU	4,21	**3,85**	4,07	-8,7	-5,5	4,21	**3,85**	4,07	-8,7	-5,6	4,04	**3,74**	3,80	-7,5	-1,6
IE	9,87	**8,62**	8,82	-12,6	-2,2	9,87	**8,62**	8,82	-12,6	-2,2	-	**-**	-	-	-
IT	3,84	**3,88**	3,67	+1,2	+5,7	5,33	**5,43**	5,16	+1,9	+5,2	3,17	**3,16**	3,01	-0,6	+4,8
LT	3,39	**4,08**	3,82	+20,3	+6,9	3,39	**4,08**	3,82	+20,3	+6,9	-	**-**	-	-	-
LU	5,54	**6,13**	6,07	+10,7	+1,0	5,54	**6,13**	6,07	+10,7	+1,0	-	**-**	-	-	-
LV	3,06	**3,76**	3,48	+22,9	+8,0	3,06	**3,76**	3,48	+22,9	+8,0	-	**-**	-	-	-
MT	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
NL	7,85	**8,81**	8,40	+12,2	+4,9	7,85	**8,81**	8,40	+12,2	+4,9	-	**-**	-	-	-
PL	4,14	**3,92**	4,05	-5,1	-3,1	4,14	**3,92**	4,05	-5,1	-3,1	-	**-**	-	-	-
PT	1,36	**0,86**	1,72	-37,1	-50,2	1,36	**0,86**	1,72	-37,1	-50,2	-	**-**	-	-	-
RO	3,63	**2,61**	2,76	-28,1	-5,5	3,63	**2,61**	2,76	-28,1	-5,5	-	**-**	-	-	-
SE	5,36	**5,89**	5,84	+9,7	+0,7	5,36	**5,89**	5,84	+9,7	+0,7	-	**-**	-	-	-
SI	5,17	**4,90**	4,52	-5,2	+8,3	5,17	**4,90**	4,52	-5,2	+8,3	-	**-**	-	-	-
SK	4,52	**3,68**	4,15	-18,7	-11,5	4,53	**3,68**	4,15	-18,9	-11,4	4,20	**3,68**	4,29	-12,3	-14,2
UK	7,75	**7,35**	7,76	-5,2	-5,3	7,75	**7,35**	7,76	-5,2	-5,3	-	**-**	-	-	-

Country	TOTAL BARLEY (t/ha)					SPRING BARLEY (t/ha)					WINTER BARLEY (t/ha)				
	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs
EU27	4,31	**4,33**	4,36	+0,4	-0,8	3,86	**3,86**	3,83	-0,1	+0,7	4,99	**5,17**	5,15	+3,5	+0,4
AT	5,61	**4,98**	4,83	-11,2	+3,1	4,98	**4,15**	4,10	-16,7	+1,2	6,21	**5,76**	5,68	-7,2	+1,4
BE	7,92	**8,57**	8,44	+8,2	+1,5	-	**-**	-	-	-	7,92	**8,57**	8,44	+8,2	+1,5
BG	4,00	**3,67**	3,41	-8,1	+7,6	-	**-**	-	-	-	4,00	**3,67**	3,41	-8,1	+7,6
CY	1,49	**1,23**	1,11	-17,2	+11,2	-	**-**	-	-	-	1,49	**1,23**	1,11	-17,2	+11,2
CZ	4,49	**4,28**	4,31	-4,7	-0,7	4,43	**4,15**	4,15	-6,3	+0,0	4,64	**4,64**	4,70	+0,0	-1,4
DE	5,46	**6,06**	5,96	+10,9	+1,7	4,90	**5,22**	4,81	+6,6	+8,4	5,67	**6,48**	6,34	+14,4	+2,3
DK	5,43	**5,44**	5,19	+0,2	+4,8	5,38	**5,35**	5,04	-0,6	+6,1	5,58	**5,94**	5,68	+6,5	+4,7
EE	2,44	**2,62**	2,55	+7,1	+2,5	2,44	**2,62**	2,55	+7,1	+2,5	-	**-**	-	-	-
ES	2,98	**2,45**	3,03	-17,5	-19,0	3,01	**2,52**	3,11	-16,2	-19,0	2,79	**2,09**	2,65	-25,1	-21,1
FI	3,41	**3,44**	3,43	+1,1	+0,3	3,41	**3,44**	3,43	+1,1	+0,3	-	**-**	-	-	-
FR	5,68	**6,45**	6,25	+13,4	+3,1	5,04	**6,31**	5,94	+25,3	+6,3	5,98	**6,54**	6,38	+9,3	+2,5
GR	2,38	**2,48**	2,42	+4,4	+2,6	-	**-**	-	-	-	2,38	**2,48**	2,42	+4,4	+2,6
HU	3,84	**3,51**	3,63	-8,6	-3,4	3,46	**3,08**	3,18	-11,0	-3,1	4,08	**3,76**	3,93	-7,8	-4,3
IE	7,80	**6,95**	6,95	-10,8	+0,0	7,50	**6,55**	6,72	-12,7	-2,5	9,00	**8,21**	8,46	-8,8	-3,0
IT	3,64	**3,68**	3,60	+1,0	+2,3	-	**-**	-	-	-	3,64	**3,68**	3,60	+1,0	+2,3
LT	2,90	**2,88**	2,83	-0,7	+1,8	2,90	**2,88**	2,83	-0,7	+1,8	-	**-**	-	-	-
LU	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
LV	2,40	**2,62**	2,46	+9,0	+6,2	2,40	**2,62**	2,46	+9,0	+6,2	-	**-**	-	-	-
MT	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
NL	5,93	**6,02**	5,99	+1,5	+0,5	5,93	**6,02**	5,99	+1,5	+0,5	-	**-**	-	-	-
PL	3,27	**3,22**	3,22	-1,5	-0,2	3,13	**3,16**	3,07	+1,2	+3,2	3,75	**3,61**	3,95	-3,8	-8,7
PT	1,26	**0,89**	1,77	-29,7	-50,0	-	**-**	-	-	-	1,26	**0,89**	1,77	-29,7	-50,0
RO	3,35	**2,39**	2,53	-28,7	-5,7	2,35	**1,85**	1,88	-21,2	-1,2	3,91	**2,68**	2,94	-31,5	-8,8
SE	4,35	**4,46**	4,30	+2,4	+3,7	4,35	**4,46**	4,30	+2,4	+3,7	-	**-**	-	-	-
SI	4,54	**4,39**	4,00	-3,4	+9,8	-	**-**	-	-	-	4,54	**4,39**	4,00	-3,4	+9,8
SK	3,93	**3,46**	3,48	-11,9	-0,6	3,94	**3,46**	3,46	-12,1	+0,2	3,86	**3,45**	3,70	-10,7	-6,8
UK	5,66	**5,72**	5,76	+1,0	-0,7	5,39	**5,28**	5,38	-2,1	-1,8	6,13	**6,48**	6,35	+5,8	+2,1

Country	GRAIN MAIZE (t/ha)					RYE (t/ha)					TRITICALE (t/ha)				
	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs
EU27	7,62	**6,05**	6,94	-20,6	-12,8	3,05	**3,40**	3,18	+11,2	+6,8	3,89	**3,89**	3,98	-0,1	-2,2
AT	11,30	**10,50**	10,43	-7,0	+0,7	4,40	**4,02**	3,98	-8,7	+1,0	5,00	**5,08**	5,13	+1,5	-1,0
BE	11,10	**12,02**	11,81	+8,3	+1,8	-	**-**	-	-	-	-	**-**	-	-	-
BG	5,53	**3,09**	4,33	-44,2	-28,6	1,65	**1,75**	1,77	+5,9	-1,1	3,09	**3,22**	3,01	+4,4	+7,1
CY	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
CZ	8,79	**7,67**	7,62	-12,8	+0,7	4,69	**4,58**	4,59	-2,2	+0,0	4,52	**4,09**	4,22	-9,6	-3,0
DE	10,62	**10,04**	9,68	-5,5	+3,7	4,11	**5,03**	4,70	+22,4	+6,9	5,23	**5,79**	5,66	+10,8	+2,3
DK*	5,22	**-**	5,01	-	-	5,11	**5,35**	5,00	+4,7	+7,0	5,17	**5,24**	5,02	+1,3	+4,2
EE	-	**-**	-	-	-	2,40	**2,71**	2,73	+12,5	-0,8	-	**-**	-	-	-
ES	10,47	**10,15**	10,22	-3,0	-0,6	2,46	**1,90**	2,12	-22,8	-10,5	2,51	**1,30**	2,45	-48,2	-47,1
FI	-	**-**	-	-	-	2,90	**2,73**	2,69	-5,6	+1,7	-	**-**	-	-	-
FR	10,19	**9,28**	9,33	-8,9	-0,5	4,50	**4,84**	4,78	+7,3	+1,1	5,08	**5,37**	5,20	+5,7	+3,3
GR	11,09	**10,61**	10,53	-4,4	+0,7	2,14	**2,11**	2,07	-1,3	+1,8	-	**-**	-	-	-
HU	6,60	**3,86**	6,16	-41,5	-37,4	2,33	**2,14**	2,19	-8,1	-2,0	3,44	**3,08**	3,24	-10,4	-4,7
IE	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
IT	9,80	**7,82**	9,36	-20,2	-16,5	-	**-**	-	-	-	-	**-**	-	-	-
LT	7,49	**6,12**	5,13	-18,2	+19,4	2,02	**2,44**	2,34	+20,6	+4,5	2,51	**2,95**	2,78	+17,5	+6,1
LU	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
LV	-	**-**	-	-	-	2,35	**2,88**	2,91	+22,2	-1,2	2,28	**2,63**	2,55	+15,5	+3,1
MT	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
NL	11,52	**12,40**	11,53	+7,6	+7,5	-	**-**	-	-	-	-	**-**	-	-	-
PL	7,18	**6,51**	6,31	-9,3	+3,2	2,40	**2,54**	2,45	+6,0	+3,9	3,34	**3,01**	3,36	-9,8	-10,5
PT	7,91	**7,20**	6,74	-9,1	+6,7	0,85	**0,90**	0,94	+5,8	-4,7	0,93	**0,92**	1,42	-0,1	-34,8
RO	4,48	**2,34**	3,37	-47,8	-30,7	-	**-**	-	-	-	3,60	**3,02**	2,96	-16,1	+2,2
SE	-	**-**	-	-	-	5,31	**5,92**	5,57	+11,5	+6,2	4,46	**4,82**	4,88	+8,0	-1,1
SI	8,57	**7,60**	7,96	-11,3	-4,6	-	**-**	-	-	-	-	**-**	-	-	-
SK	7,15	**5,81**	6,38	-18,8	-8,9	3,10	**2,65**	2,77	-14,6	-4,5	3,15	**2,78**	3,00	-12,0	-7,5
UK	-	**-**	-	-	-	-	**-**	-	-	-	4,00	**4,06**	4,04	+1,5	+0,4

Country	RAPE AND TURNIP RAPE (t/ha)					POTATO (t/ha)				
	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs
EU27	2,86	**3,02**	3,00	+5,6	+0,6	32,48	**30,58**	30,05	-5,8	+1,8
AT	3,35	**3,09**	3,13	-7,8	-1,1	35,71	**32,49**	32,29	-9,0	+0,6
BE	4,61	**4,07**	4,11	-11,7	-0,9	50,14	**42,77**	46,04	-14,7	-7,1
BG	2,25	**2,27**	2,27	+1,0	+0,0	14,34	**13,18**	15,74	-8,1	-16,3
CY	-	**-**	-	-	-	-	**-**	-	-	-
CZ	2,80	**2,82**	2,96	+0,6	-4,8	30,45	**26,53**	26,56	-12,9	-0,1
DE	2,91	**3,55**	3,66	+21,8	-3,1	45,76	**44,86**	43,23	-1,9	+3,8
DK	3,38	**3,76**	3,55	+11,3	+5,9	38,94	**41,14**	39,43	+5,7	+4,4
EE	1,58	**1,70**	1,56	+7,5	+9,2	-	**-**	-	-	-
ES	1,98	**1,76**	1,81	-11,2	-3,0	30,00	**30,18**	29,31	+0,6	+3,0
FI	1,26	**1,22**	1,35	-3,6	-9,8	27,59	**28,27**	26,72	+2,4	+5,8
FR	3,45	**3,36**	3,35	-2,6	+0,5	42,29	**42,90**	43,29	+1,5	-0,9
GR*	2,37	**-**	2,49	-	-	26,64	**26,67**	25,52	+0,1	+4,5
HU	2,26	**2,16**	2,30	-4,5	-6,1	26,99	**21,50**	24,64	-20,3	-12,8
IE	-	**-**	-	-	-	32,36	**31,97**	31,97	-1,2	+0,0
IT	2,58	**2,58**	2,28	+0,2	+13,5	24,95	**24,94**	24,98	+0,0	-0,1
LT	1,94	**1,97**	1,92	+2,0	+3,0	15,58	**14,40**	13,70	-7,5	+5,1
LU	-	**-**	-	-	-	-	**-**	-	-	-
LV	1,87	**2,20**	2,14	+17,8	+2,8	17,14	**17,00**	16,83	-0,8	+1,0
MT	-	**-**	-	-	-	-	**-**	-	-	-
NL	-	**-**	-	-	-	46,05	**44,96**	45,15	-2,4	-0,4
PL	2,26	**2,48**	2,69	+9,9	-7,7	23,04	**21,22**	20,13	-7,9	+5,4
PT	-	**-**	-	-	-	14,71	**16,10**	15,74	+9,5	+2,3
RO	1,94	**1,48**	1,59	-23,6	-6,8	16,55	**12,90**	14,77	-22,0	-12,6
SE	2,65	**2,82**	2,73	+6,6	+3,4	31,84	**32,76**	30,64	+2,9	+6,9
SI	-	**-**	-	-	-	-	**-**	-	-	-
SK	2,31	**2,15**	2,25	-7,0	-4,5	-	**-**	-	-	-
UK	3,94	**3,48**	3,50	-11,7	-0,7	42,30	**42,97**	42,60	+1,6	+0,9

* For "rape and turnip rape" in the range of the 5-yrs average (2006-2011) only 2011 and 2010 figures available for computation

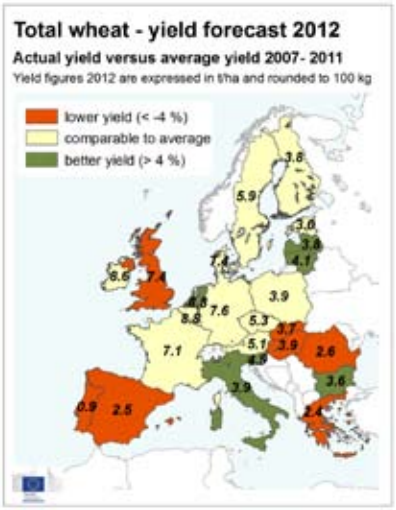
Country	SUGAR BEETS (t/ha)					SUNFLOWER (t/ha)				
	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs
EU27	70,99	**69,25**	67,74	-2,5	+2,2	1,97	**1,64**	1,79	-16,9	-8,6
AT	74,20	**71,58**	69,79	-3,5	+2,6	2,83	**2,67**	2,68	-5,7	-0,5
BE	86,96	**75,82**	77,52	-12,8	-2,2	-	**-**	-	-	-
BG	-	**-**	-	-	-	1,93	**1,64**	1,74	-14,8	-5,6
CY	-	**-**	-	-	-	-	**-**	-	-	-
CZ	66,84	**59,08**	57,90	-11,6	+2,0	2,48	**2,42**	2,32	-2,5	+4,5
DE	62,87	**66,20**	64,03	+5,3	+3,4	1,98	**2,27**	2,22	+14,3	+1,9
DK	67,50	**62,64**	58,98	-7,2	+6,2	-	**-**	-	-	-
EE	-	**-**	-	-	-	-	**-**	-	-	-
ES	88,14	**89,18**	80,29	+1,2	+11,1	1,26	**0,98**	1,19	-22,5	-17,9
FI	47,92	**41,39**	39,86	-13,6	+3,8	-	**-**	-	-	-
FR	91,24	**89,90**	87,65	-1,5	+2,6	2,54	**2,43**	2,46	-4,2	-1,2
GR	58,88	**66,10**	65,50	+12,3	+0,9	1,24	**1,28**	1,45	+3,6	-11,1
HU	53,54	**43,60**	53,22	-18,6	-18,1	2,38	**2,05**	2,29	-14,0	-10,5
IE	-	**-**	-	-	-	-	**-**	-	-	-
IT	57,01	**46,31**	55,98	-18,8	-17,3	2,35	**1,87**	2,24	-20,4	-16,7
LT	49,88	**49,71**	45,51	-0,3	+9,2	-	**-**	-	-	-
LU	-	**-**	-	-	-	-	**-**	-	-	-
LV	-	**-**	-	-	-	-	**-**	-	-	-
MT	-	**-**	-	-	-	-	**-**	-	-	-
NL	79,89	**77,98**	74,51	-2,4	+4,7	-	**-**	-	-	-
PL	55,64	**54,89**	51,36	-1,3	+6,9	-	**-**	-	-	-
PT	-	**-**	-	-	-	0,86	**0,61**	0,68	-28,5	-10,2
RO	34,31	**27,77**	34,49	-19,1	-19,5	1,89	**1,25**	1,40	-34,0	-10,7
SE	62,90	**54,06**	56,32	-14,1	-4,0	-	**-**	-	-	-
SI	-	**-**	-	-	-	-	**-**	-	-	-
SK	64,14	**57,89**	56,23	-9,7	+3,0	2,27	**2,24**	2,18	-1,3	+2,5
UK	65,00	**64,21**	62,27	-1,2	+3,1	-	**-**	-	-	-

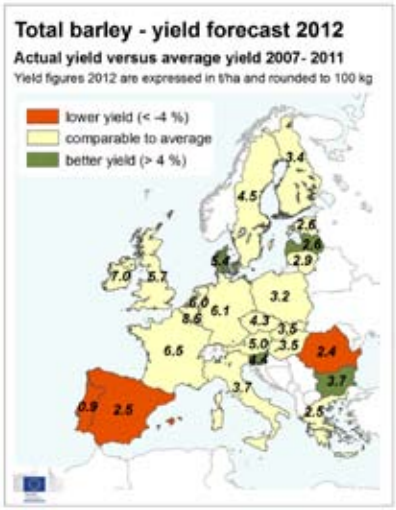
Notes: Yields are forecast for crops with more than 10000 ha per country; figures are rounded to 100 kg
Sources: 2007-2012 data come from DG AGRICULTURE short term Outlook data (dated August 2012, received on 03/09/2012)
EUROSTAT Eurobase (last update:29/08/2012) and EES (last update: 16/08/2012)
2012 yields come from MARS CROP YIELD FORECASTING SYSTEM (CGMS output up to 20/09/2012)

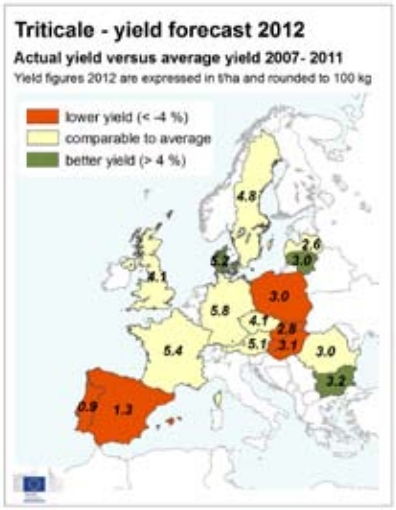
Country	WHEAT (t/ha)					BARLEY (t/ha)					GRAIN MAIZE (t/ha)				
	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs
BY	3,53	**3,40**	3,44	-3,8	-1,4	3,29	**3,14**	3,23	-4,4	-2,7	5,37	5,83	**4,89**	8,50	+19,3
DZ	1,47	**1,42**	1,39	-3,1	+2,5	1,23	**1,26**	1,26	+2,7	-0,1	-	-	**-**	-	-
MA	1,95	**1,31**	1,55	-32,8	-15,5	1,15	**0,90**	1,04	-21,5	-13,6	-	-	**-**	-	-
TN	1,57	**2,00**	1,58	+27,1	+26,1	1,94	**2,07**	1,33	+6,8	+56,4	-	-	**-**	-	-
TR	2,69	**2,38**	2,41	-11,7	-1,6	2,65	**2,56**	2,33	-3,2	+10,2	7,48	7,08	**7,19**	-5,40	-1,6
UA	3,22	**2,71**	3,00	-15,8	-9,6	2,34	**2,18**	2,23	-7,0	-2,5	4,85	4,64	**4,60**	-4,40	+0,9

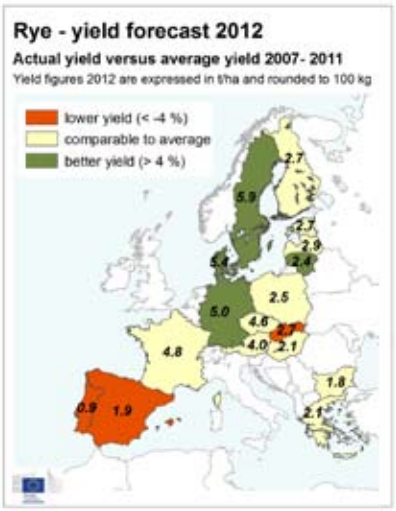
Notes: Yields are forecast for crops with more than 10000 ha per country; figures are rounded to 100 kg
Sources: FAO database, INRA-Marocco

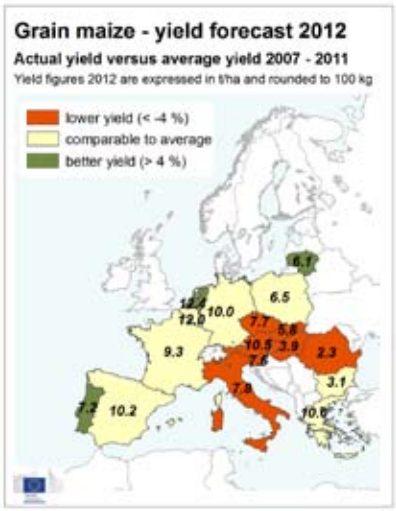
Yield maps

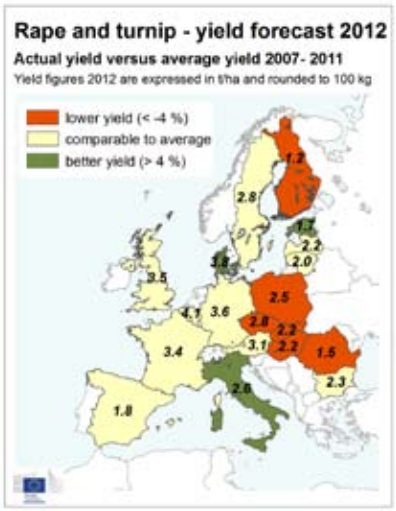

Total wheat - yield forecast 2012
Actual yield versus average yield 2007- 2011
Yield figures 2012 are expressed in t/ha and rounded to 100 kg
lower yield (< -4 %)
comparable to average
better yield (> 4 %)

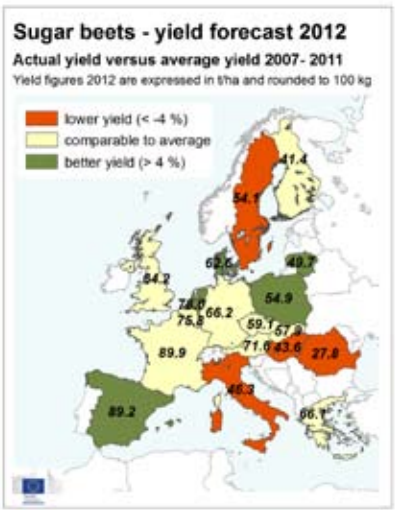

Total barley - yield forecast 2012
Actual yield versus average yield 2007- 2011
Yield figures 2012 are expressed in t/ha and rounded to 100 kg
lower yield (< -4 %)
comparable to average
better yield (> 4 %)

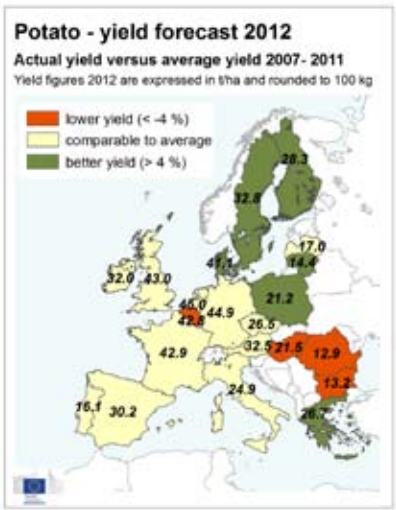

Triticale - yield forecast 2012
Actual yield versus average yield 2007- 2011
Yield figures 2012 are expressed in t/ha and rounded to 100 kg
lower yield (< -4 %)
comparable to average
better yield (> 4 %)

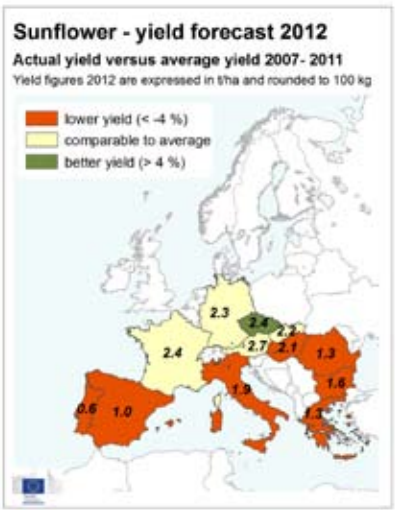

Rye - yield forecast 2012
Actual yield versus average yield 2007- 2011
Yield figures 2012 are expressed in t/ha and rounded to 100 kg
lower yield (< -4 %)
comparable to average
better yield (> 4 %)


Grain maize - yield forecast 2012
Actual yield versus average yield 2007 - 2011
Yield figures 2012 are expressed in t/ha and rounded to 100 kg
lower yield (< -4 %)
comparable to average
better yield (> 4 %)


Rape and turnip - yield forecast 2012
Actual yield versus average yield 2007- 2011
Yield figures 2012 are expressed in t/ha and rounded to 100 kg
lower yield (< -4 %)
comparable to average
better yield (> 4 %)


Sugar beets - yield forecast 2012
Actual yield versus average yield 2007- 2011
Yield figures 2012 are expressed in t/ha and rounded to 100 kg
lower yield (< -4 %)
comparable to average
better yield (> 4 %)

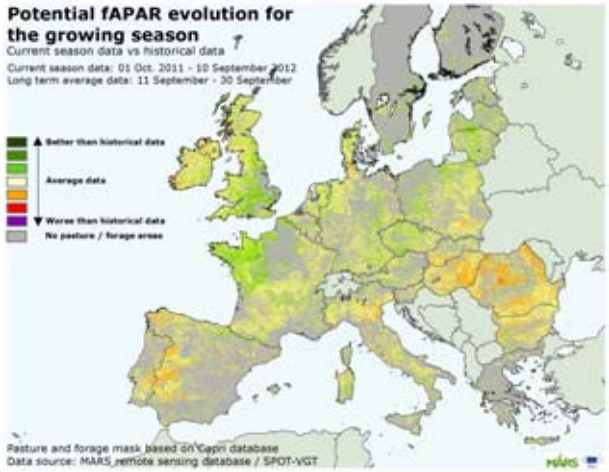

Potato - yield forecast 2012
Actual yield versus average yield 2007- 2011
Yield figures 2012 are expressed in t/ha and rounded to 100 kg
lower yield (< -4 %)
comparable to average
better yield (> 4 %)

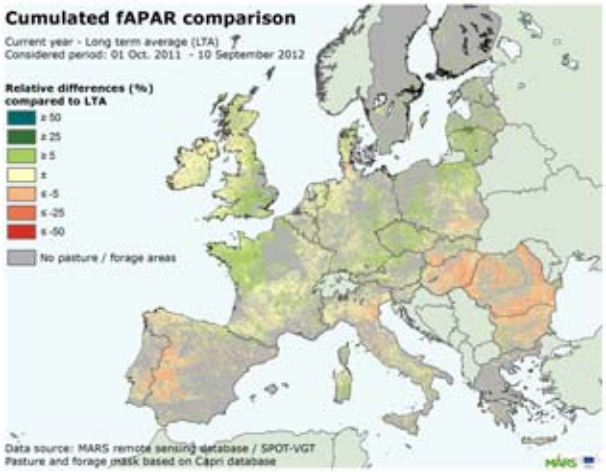

Sunflower - yield forecast 2012
Actual yield versus average yield 2007- 2011
Yield figures 2012 are expressed in t/ha and rounded to 100 kg
lower yield (< -4 %)
comparable to average
better yield (> 4 %)

5. PASTURES IN EUROPE – UPDATE REMOTE SENSING MONITORING

Low biomass production persists in Southern Europe and Black Sea countries

The negative meteorological conditions experienced during July and especially August in Italy and Black Sea countries, with hot temperatures and scarce precipitation, have severely limited the growth of pastures. Biomass production is quite favourable in central and northern Europe.

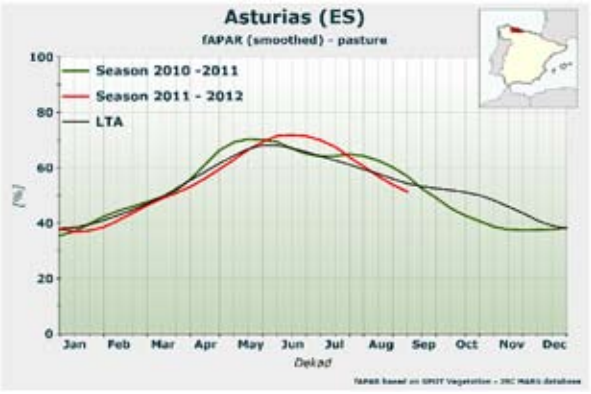


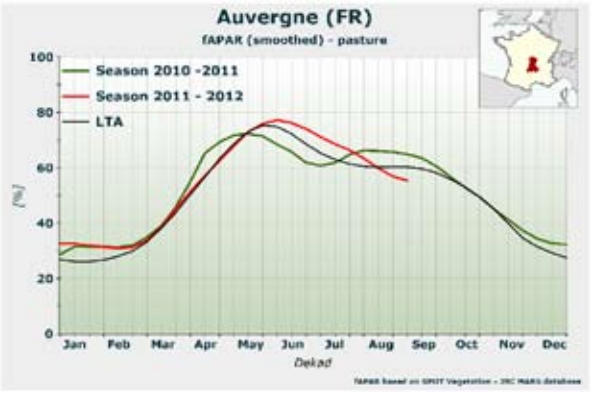


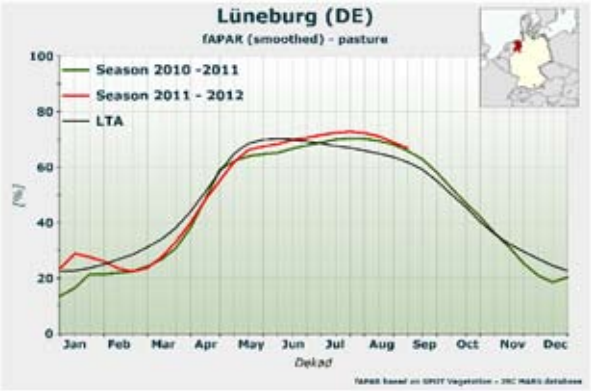
In **Spain** and **Portugal**, the season has finished in the Dehesa, the main producing region of the Iberian Peninsula, strongly affected by persistent dry conditions throughout the season. Only in the Cantabrian basin (*Asturias*, *País Vasco*) is the season still going on with average production levels. In northern **Italy**, **Romania** and **Hungary**, the hot and dry spell affecting southern Europe during the months of July and August stopped the positive evolution of pastures after spring. The sharp increase in the evaporative demand couldn't be compensated by rainfall, infrequent and scarce, resulting in a dramatic reduction of biomass accumulation.

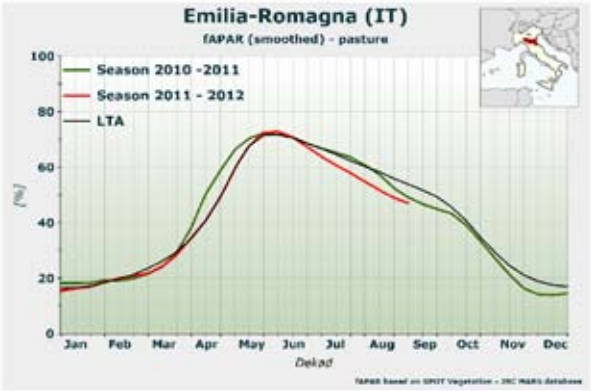
In **France** and the south of the **UK** the season has been quite satisfactory up to now, with abundant precipitation throughout the season and warm temperatures during the last month, favouring biomass production. The outlook for **Ireland** and the north of the UK is on the average. This is because the growth of pastures has been limited by a lack of incoming solar radiation due to continuous cloud cover during the summer. Expectations are also close to normal for **Benelux**. **Poland**, **Estonia**, **Latvia** and **Lithuania** are maintaining production levels above seasonal values, favoured by warm temperatures during the summer. Similar conditions have been observed for **Denmark**, **Finland** and **Sweden**.

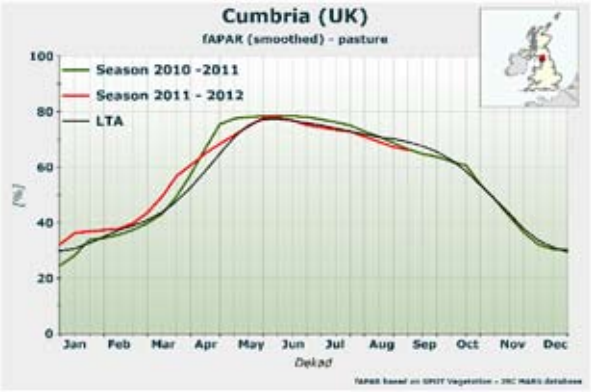
In central Europe the evolution of pastures during summer also looks quite positive, especially in the **Czech Republic**, **Austria** and southern **Germany**, where substantial rainfall registered in August kept biomass production high.

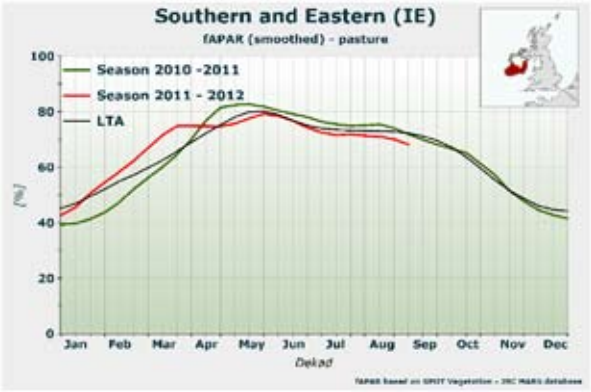

Asturias (ES)
fAPAR (smoothed) - pasture
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Dekad

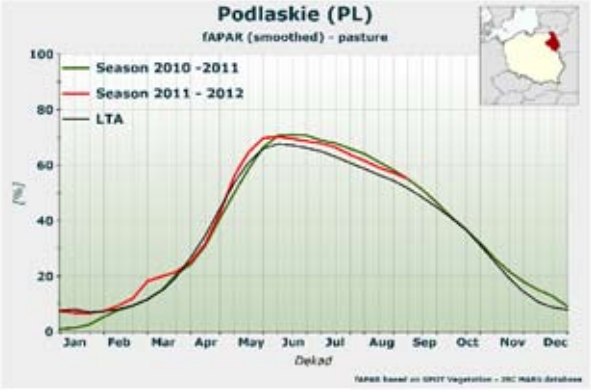

Auvergne (FR)
fAPAR (smoothed) - pasture
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Dekad

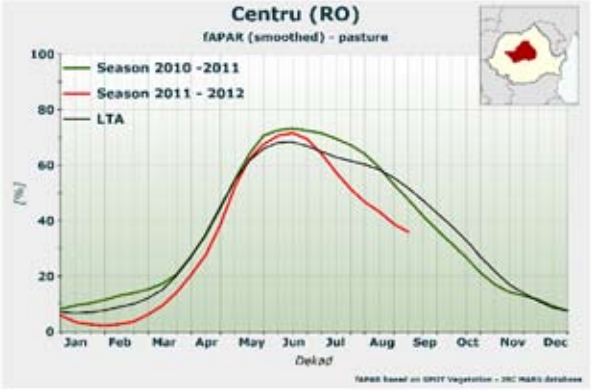

Lüneburg (DE)
fAPAR (smoothed) - pasture
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Dekad


Emilia-Romagna (IT)
fAPAR (smoothed) - pasture
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Dekad


Cumbria (UK)
fAPAR (smoothed) - pasture
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Dekad

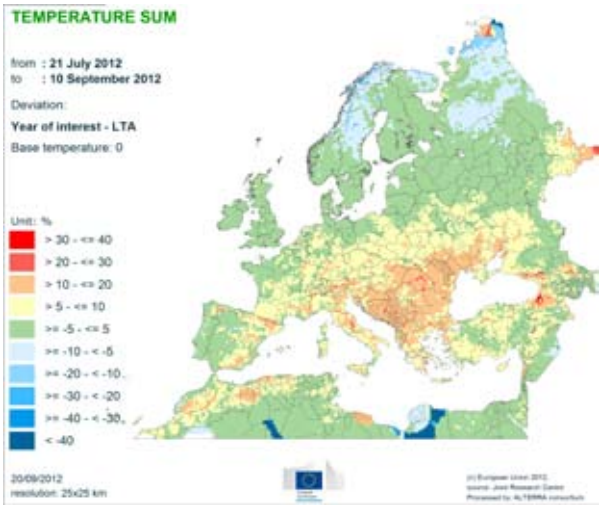

Southern and Eastern (IE)
fAPAR (smoothed) - pasture
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Dekad

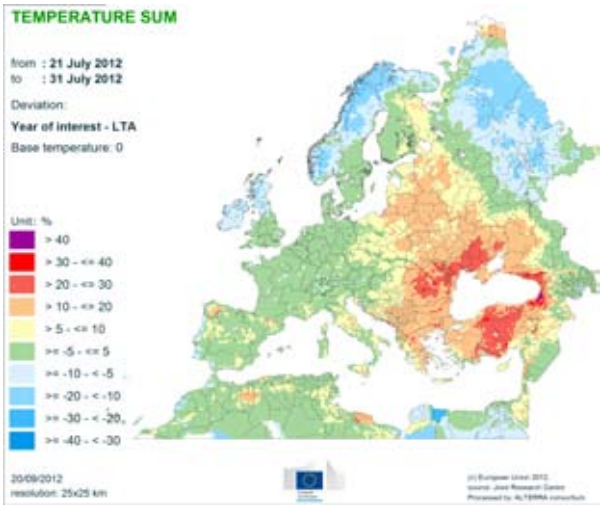

Podlaskie (PL)
fAPAR (smoothed) - pasture
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Dekad

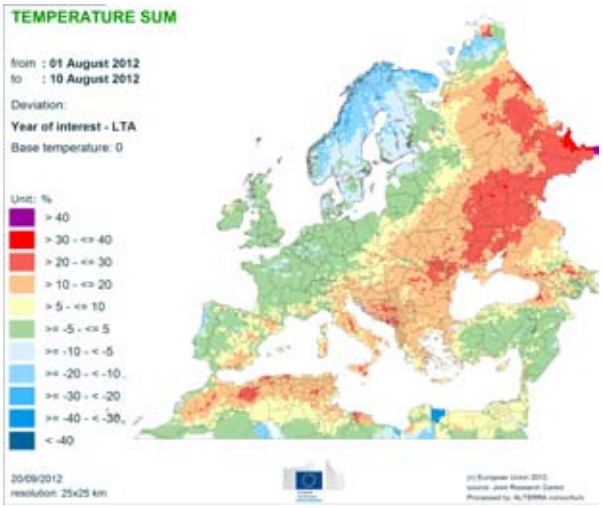

Centru (RO)
fAPAR (smoothed) - pasture
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Dekad

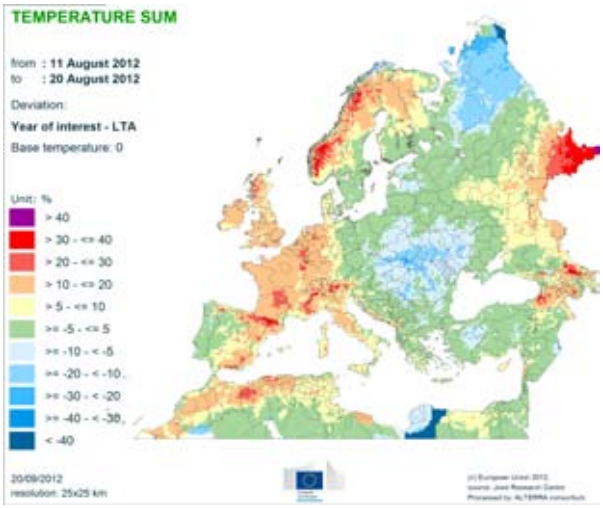
6. ATLAS MAPS

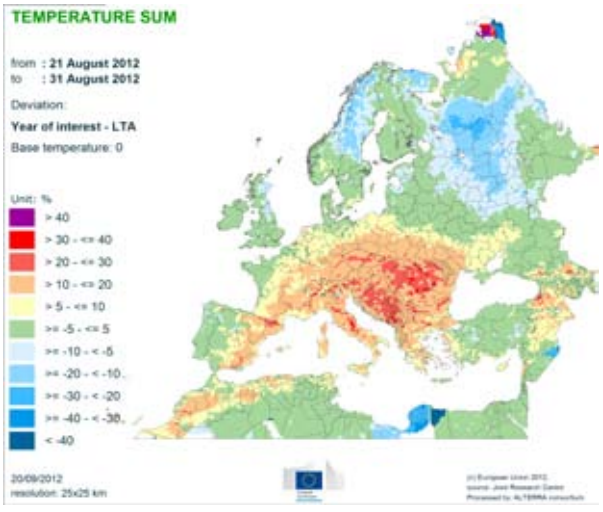
Temperatures

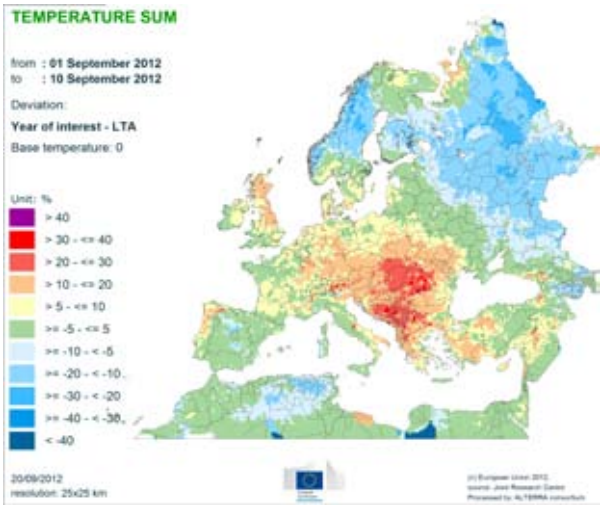




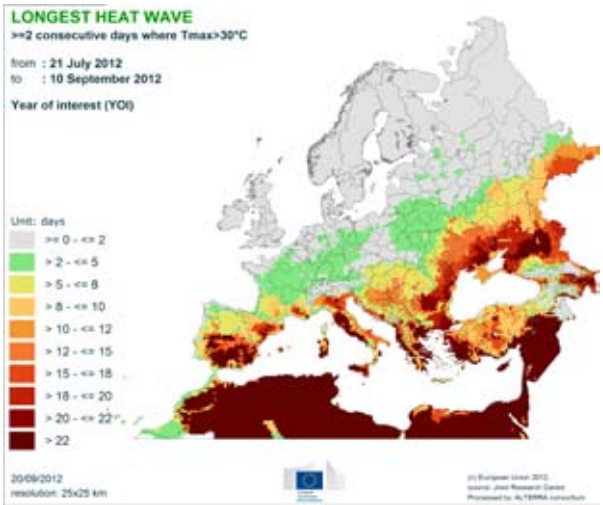


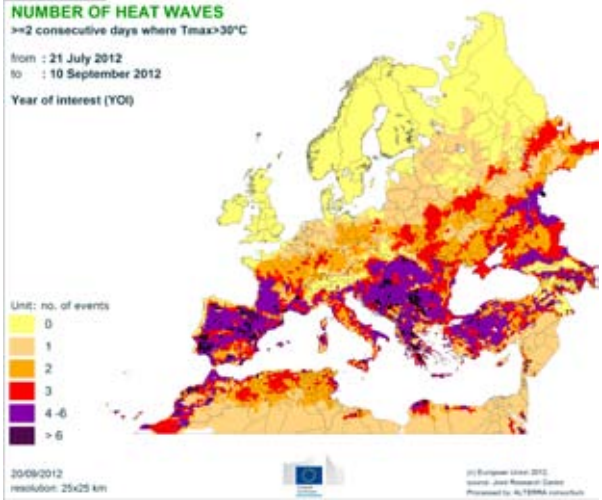


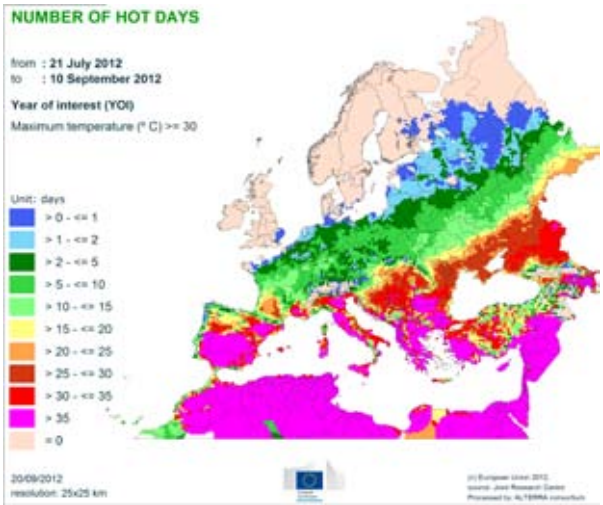


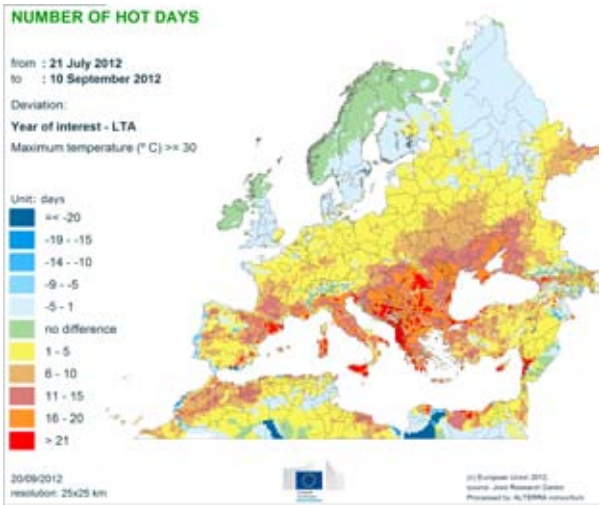


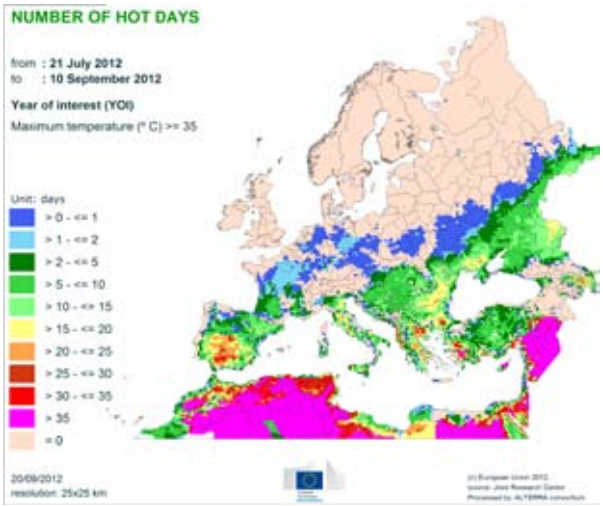
Heat waves

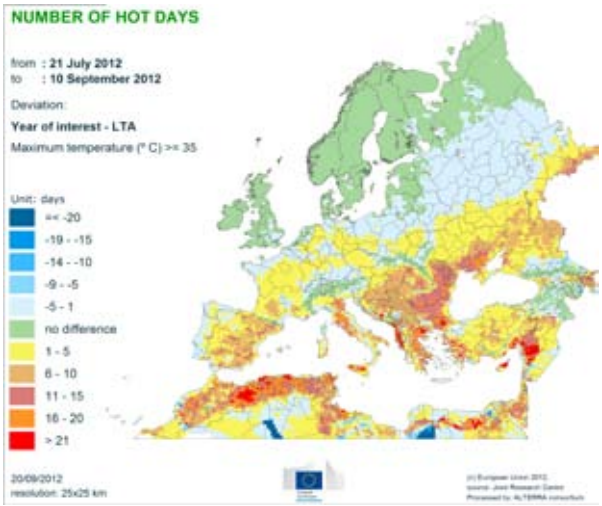

LONGEST HEAT WAVE
>=2 consecutive days where Tmax>30°C
from : 21 July 2012
to : 10 September 2012
Year of interest (YOI)
Unit: days
>= 0 - <= 2
> 2 - <= 5
> 5 - <= 8
> 8 - <= 10
> 10 - <= 12
> 12 - <= 15
> 15 - <= 18
> 18 - <= 20
> 20 - <= 22
> 22
20/09/2012
resolution: 25x25 km


NUMBER OF HEAT WAVES
>=2 consecutive days where Tmax>30°C
from : 21 July 2012
to : 10 September 2012
Year of interest (YOI)
Unit: no. of events
0
1
2
3
4-6
> 6
20/09/2012
resolution: 25x25 km

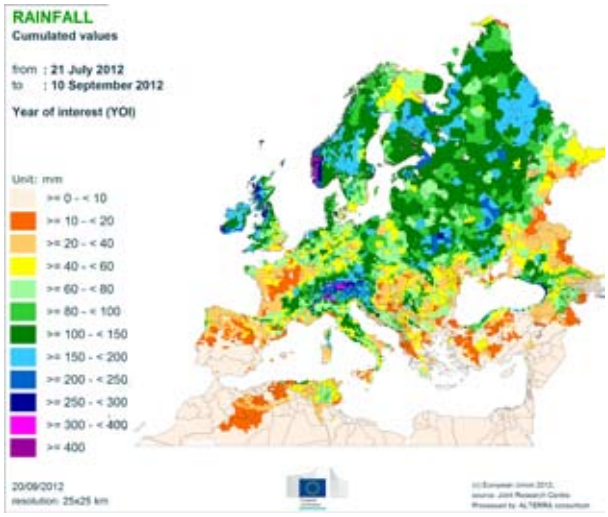

NUMBER OF HOT DAYS
from : 21 July 2012
to : 10 September 2012
Year of interest (YOI)
Maximum temperature (° C) >= 30
Unit: days
> 0 - <= 1
> 1 - <= 2
> 2 - <= 5
> 5 - <= 10
> 10 - <= 15
> 15 - <= 20
> 20 - <= 25
> 25 - <= 30
> 30 - <= 35
> 35
= 0
20/09/2012
resolution: 25x25 km

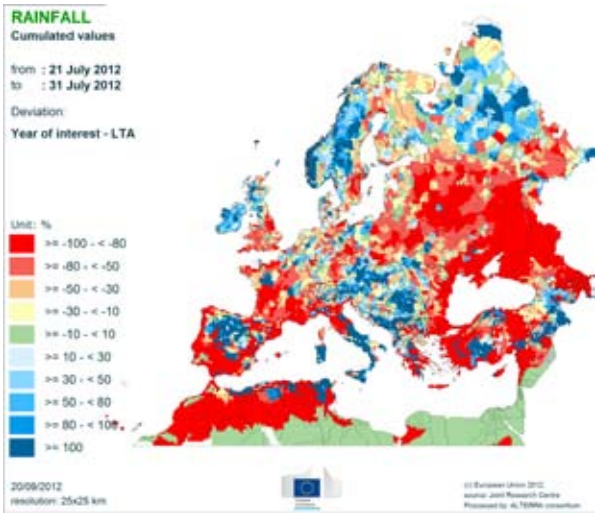

NUMBER OF HOT DAYS
from : 21 July 2012
to : 10 September 2012
Deviation:
Year of interest - LTA
Maximum temperature (° C) >= 30
Unit: days
=< -20
-19 - -15
-14 - -10
-9 - -5
-5 - 1
no difference
1 - 5
6 - 10
11 - 15
16 - 20
> 21
20/09/2012
resolution: 25x25 km

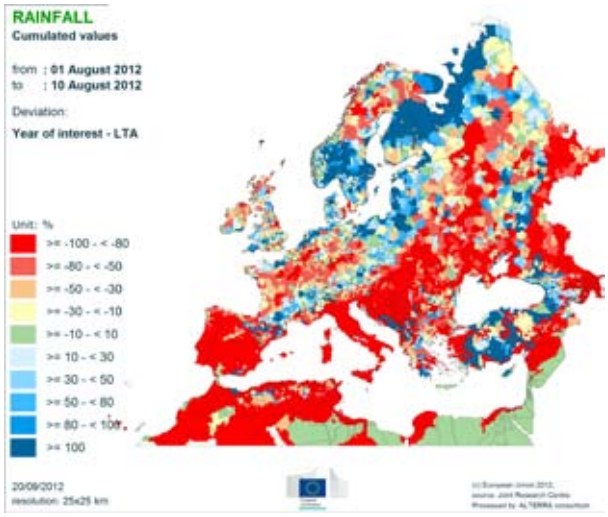

NUMBER OF HOT DAYS
from : 21 July 2012
to : 10 September 2012
Year of interest (YOI)
Maximum temperature (° C) >= 35
Unit: days
> 0 - <= 1
> 1 - <= 2
> 2 - <= 5
> 5 - <= 10
> 10 - <= 15
> 15 - <= 20
> 20 - <= 25
> 25 - <= 30
> 30 - <= 35
> 35
= 0
20/09/2012
resolution: 25x25 km

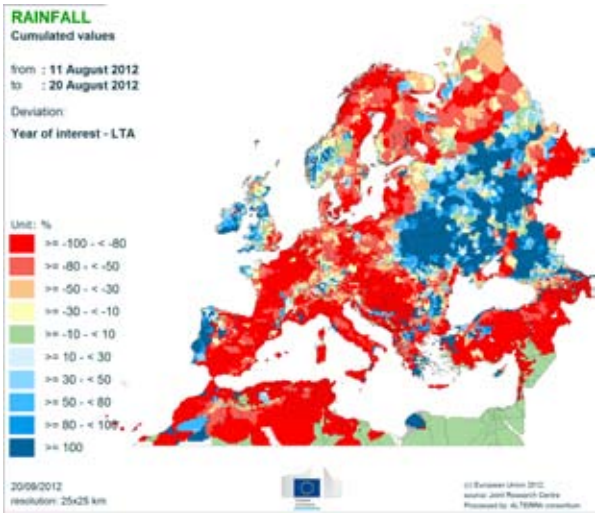

NUMBER OF HOT DAYS
from : 21 July 2012
to : 10 September 2012
Deviation:
Year of interest - LTA
Maximum temperature (° C) >= 35
Unit: days
=< -20
-19 - -15
-14 - -10
-9 - -5
-5 - 1
no difference
1 - 5
6 - 10
11 - 15
16 - 20
> 21
20/09/2012
resolution: 25x25 km

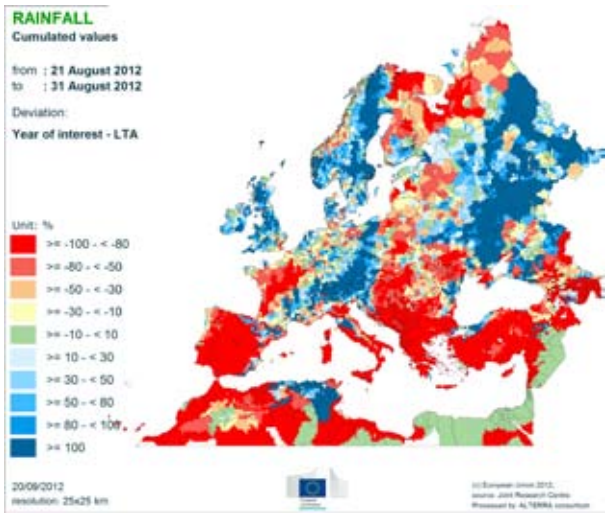
Precipitation

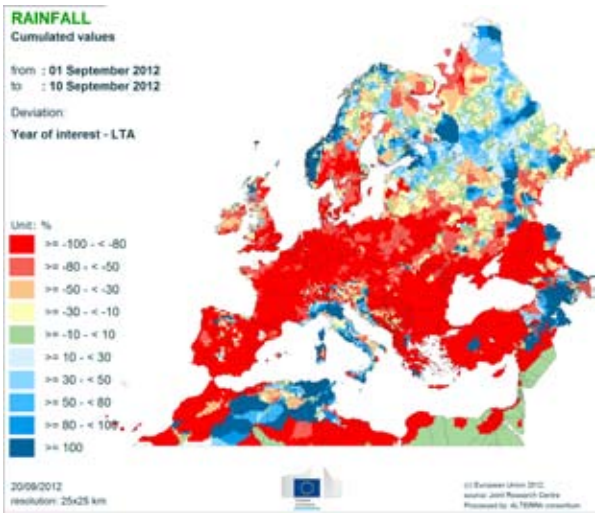




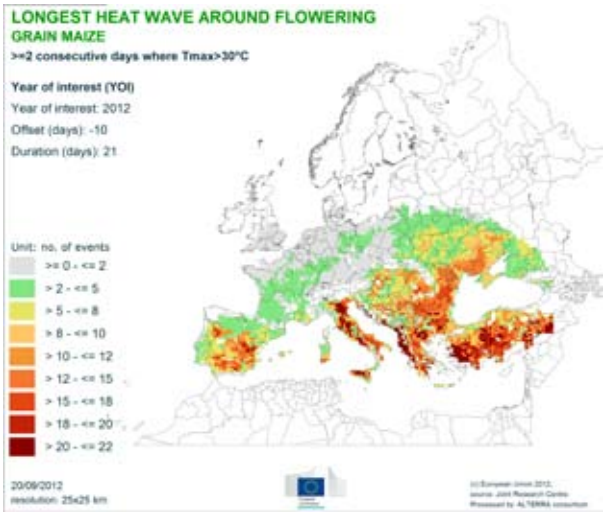


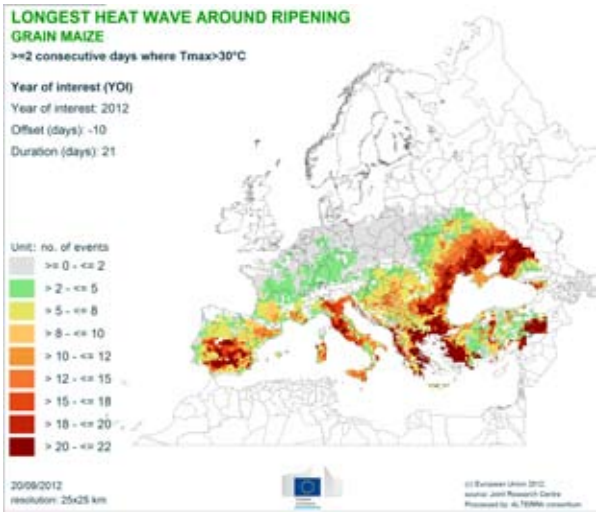




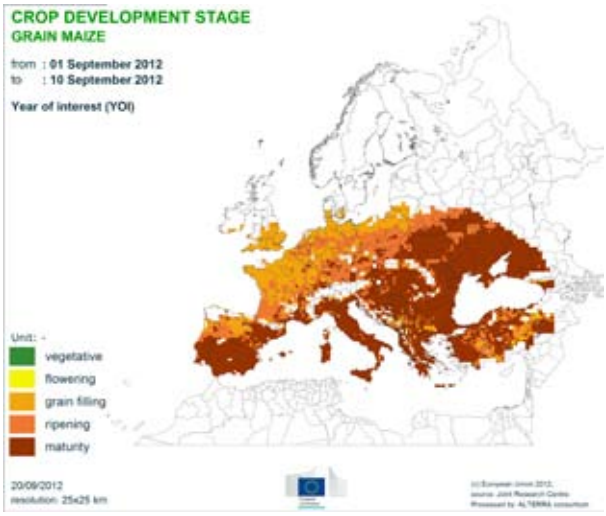


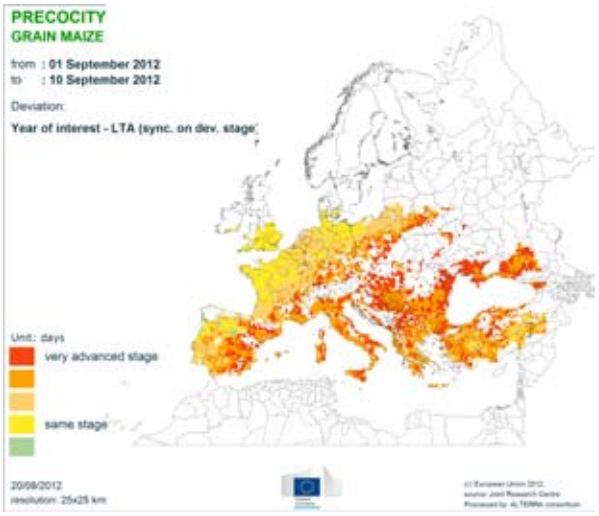
Heat waves around crop development

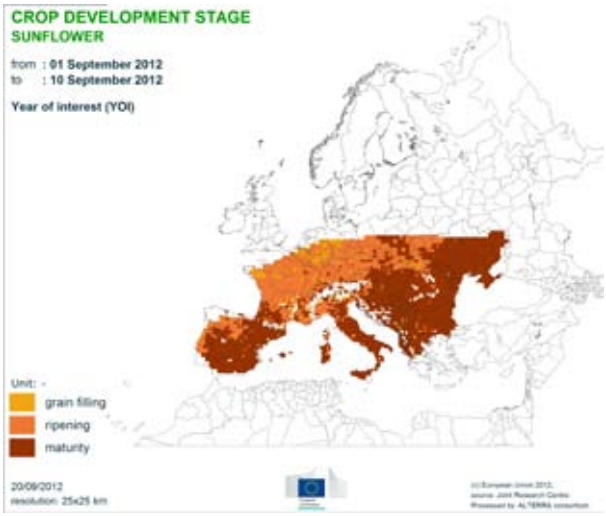


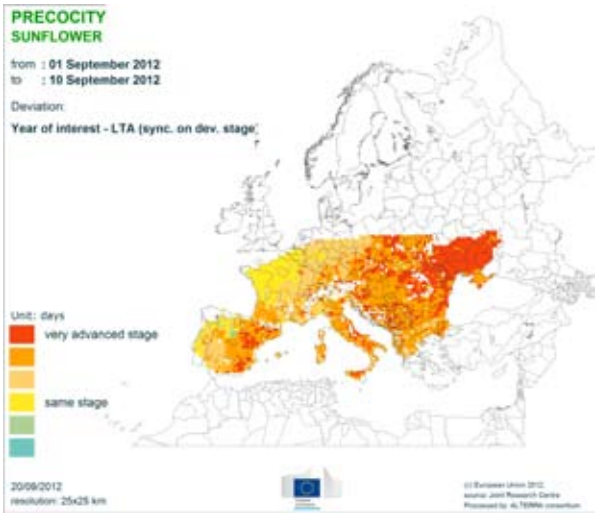


Development stage and precocity









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2012 MARS Bulletins

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10 Feb	Agromet. analysis	Vol. 20 No. 2
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